

REPORT ON THE MARKETING OF HIDES IN INDIA



DIRECTORATE OF MARKETING & INSPECTION
MINISTRY OF FOOD, AGRICULTURE, COMMUNITY
DEVELOPMENT & CO-OPERATION
(Department of Agriculture)
GOVERNMENT OF INDIA
NAGPUR

AMA. 160
800



Price : (Inland) Rs. 4.55 (Foreign) 10s. 8d. or \$1 64 cents.

**PRINTED IN INDIA BY THE MANAGER GOVERNMENT
OF INDIA PRESS NASIK AND PUBLISHED
BY THE MANAGER OF PUBLICATION DELHI-6
1967**

PREFACE

The second edition of the "Report on the Marketing of Hides in India" containing data till 1948 was brought out in 1952. Subsequent to the publication of that edition the country has witnessed several changes both with reference to re-organisation of States and pattern of production, utilisation, exports, etc., of raw hides. Owing to a decline in the beef eating population following partition and a progressive ban on cattle slaughter in many States there has been a drop in the production of slaughtered hides. Consequently there has been a great shortage of good quality hides.

Before partition the export of raw hides and skins was allowed freely and no restriction was imposed upon the imports of leather manufactures. Subsequent to partition the policy of the Government has been to restrict exports of raw hides with a view to encouraging the domestic finished leather goods industry and the export of finished goods in place of raw material. A rise in the living standards has also stepped up the domestic demand for leather. Among other developments witnessed the following may be enumerated as important ones:

The leather industry has received governmental assistance and attention to a greater measure during the successive Five Year Plans. In 1953 the Central Leather Research Institute in the chain of National Laboratories was set up in Madras under the aegis of the Council of Scientific and Industrial Research for the advancement of leather technology and for adoption of latest techniques by the leather industry. An Export Promotion Council for leather was established in 1956 at Madras. Later a separate Export Promotion Council for finished leather, leather manufactures and leather goods including footwear was started at Kanpur in 1963.

An attempt has been made in this edition to present a comprehensive picture of the recent developments, the existing pattern of production and trade, etc. The Report attempts to present essential information in regard to estimates of availability, production, utilisation, demand and various marketing aspects of hides. In the absence of any

(ii)

reliable and complete data available in many States the estimates had to be based on enquiries made from State Government Departments, trade interests, etc. Production estimates have been worked out for 1961 on the basis of livestock census. The total annual production of kips and buffalo hides had increased from 18.9 million pieces in 1948 to 23.3 million pieces in 1961. The exports of raw hides have been banned. The exports of finished leather, both semi and full, have progressively increased. Semi-tanned hides, finished leather and leather goods now earn over Rs. 43 crores worth of foreign exchange.

Any suggestion for improving the scope and utility of the Report or for implementing the suggestions made therein for improving would be welcome and would receive careful consideration.

The Directorate gratefully acknowledges the assistance and co-operation extended by officials of State Governments, the Indian Veterinary Research Institute, the Development Wing of the Ministry of Commerce and the Central Leather Research Institute. Thanks are also due to local bodies like Municipal Corporations, etc., a large number of merchants, butchers, tanners and shippers who rendered valuable assistance and willing co-operation in enabling this Directorate to conduct this survey. Particular mention deserves to be made of the Director, Central Leather Research Institute, Madras, who was good enough to go through the draft of this Report and offer valuable suggestions.

Sarvashri R. A. Bhote, Senior Marketing Officer, and S. Jayaraman, Deputy Senior Marketing Officer of the Directorate of Marketing and Inspection, were associated with the collection of data and compilation of the Report.

The Government of India should not be regarded as assuming responsibility for any statement contained in the Report.

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NAGPUR:
Dated 20-3-1967.

TABLE OF CONTENTS

	Page
Preface	(i)
1. Introduction	1
2. Production	2
2.1. World production of raw hides	3
2.2. Domestic production	4
2.3. Methods of assessment	4
2.4. Production of kips	6
2.5. Production of buff-hides (hides of buffaloes and their young stock)	7
2.6. Seasonal variations	11
3. Imports of Hides and Leather	15
3.1. Raw hides	17
3.2. Unwrought leather	20
3.3. Tanned or dressed hides	22
4. Exports of Hides and Leather	25
4.1. Total exports	25
4.2. Restrictions on export of hides from India	25
4.3. Export duty	26
4.4. Export of tanned or dressed hides	26
4.5. Export of unwrought leather	28
4.6. Net available supplies in India	31
5. Utilisation and Demand	33
5.1. Utilisation of leather for articles of common usage	33
5.2. Industrial demand	35
5.3. Quality of the finished material	38
5.4. Trend of utilisation and demand	41
5.5. Seasonal variations in demand	42
5.6. Utilisation of by-products	43

	PAGE
6. Prices	44
6.1. Unit of sale and basis of price quotations	44
6.2. Factors affecting the price of hides	46
6.3. Seasonal variations in prices	51
(i) Kips	52
(ii) Buff hides	53
6.4. Prices in relation to quality	54
6.5. Trend of prices	57
6.6. Note on price intelligence service	59
7. Preparation for the market	61
7.1. Flaying	61
7.2. Curing	64
7.3. Suggestions for improvement in flaying and curing	67
7.4. Improvements in curing methods	71
7.5. Improvements through the establishment of co-operative societies	72
8. Assembling and Distribution	74
8.1. General	74
8.2. Agencies	75
(1) Producers	76
(2) Assemblers and distributors	78
8.3. Hide markets	79
8.4. Methods of sale	82
8.5. Merchandising charges	84
8.6. Assembling and distributing markets	84
8.7. Financing of assembling and distribution	87
9. Quality and Grading	89
9.1. Quality factors	89
9.2. Sorting of hides by the trade	99
9.3. Grading of hides under AGMARK	106
10. Transportation	116
10.1. Methods and costs of transport	116
10.2. Packing for transport	122

	PAGE
11. Storage	123
11.1. Methods of storage	124
11.2. Costs of storage	126
12. State and the Leather Industry	127
12.1. Policies	127
12.2. Institutional arrangements	128
12.3. Arrangements exclusively for leather industry	128
12.4. Agencies that cover leather as a part of their programmes	129
12.5. Research, innovation and development, and technical training	132
Summary and Recommendation	135
1. Supply	135
2. Utilization and demand	137
3. Preparation for the market	140
4. Prices	142
5. Assembling and distribution	144
6. Quality and grading	146
7. Transportation	149
8. Storage	150
Appendices :	
I. Summary of Legislation in respect of bovine slaughter in various States	153
II. Estimated annual production of hides	159
III. Organised tanneries in India producing finished leather	161
IV. Names and addresses of important glue manufacturers in India	163
V. Monthly variation in prices of raw hides, 1962-63	164
VI. Certain hide assembling markets in India	167
VII. Hide Grading and Marking Rules	169
Glossary of Indian Terms	173



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REPORT ON THE MARKETING OF HIDES IN INDIA

1. INTRODUCTION

The use of hides and skins of animals by man dates back to prehistoric days when he used them for covering himself. Today, leather is used in a variety of ways, e.g., footwear, sports articles, brief cases, automobile upholstery, industrial beltings, etc.

According to the trade, the larger and thicker hides of cows, bullocks, buffaloes, horses, camels, etc., are called 'hides' while the smaller and lighter ones of calves, sheep, goats, deer and other wild animals are termed 'skins'. The small skins, utilised along with the hair or fleece, go by the term 'furs'.

Hides and crudely tanned leather have been in use in India from early times. The large receptacles, called *kose*, *charasa* or *moth*, used for drawing water from wells for irrigation purposes, are made from partially tanned hides and these are still popular in many places. Before the introduction of tins, drums, tanks, etc., containers made of raw hides called *kuppas* were commonly used for storing and transporting oil and other liquids. Even now these are being used in certain parts of the country.

Besides, indigenous contrivances for winnowing grain, ropes, riggings, coverings for boats, etc., are still made of raw and partially tanned hides. *Pakhal*, *mashak* and *dole* are other ancient gears, made of leather and hide, which the water-carriers even now use in many parts of the country.

2. PRODUCTION

Most of the hides entering the international trade are obtained as a by-product from slaughtering animals for food purposes in large abattoirs and meat canning factories. These, therefore, represent only a small share in the total value of the carcass. In foreign countries, besides meat, practically all by-products are also utilised in a variety of ways. In India, however, the position is different. On account of religious, economic and other reasons, beef is not eaten by most of the people and large abattoirs or meat packing factories do not exist. Slaughtering of big animals for meat purpose is done on a comparatively small scale in the municipal slaughter houses. Generally, only old and unserviceable animals are slaughtered, but in certain cities young she-buffaloes are also slaughtered at the end of their lactation as these cannot be economically maintained there during the dry period. The production of slaughtered hides, however, has progressively been on the decline owing to complete prohibition of slaughter in some States and partial restrictions in some others. As a consequence, a great majority of hides produced in India are of the 'fallen' type, i.e., obtained from animals which die a natural death. In such cases, it is only the hide that represents almost the entire cash value recoverable from the carcass as the value of bones, hoofs and horns is comparatively small. The meat of dead animals is not sold, though carrion eating is not uncommon in certain areas.

There are nearly 17.6 crore head of cattle and 5.1 crore head of buffaloes in India constituting nearly a fourth of the world's bovine population. Thus the number of animals from which hides can be obtained is very large. As only hides from cattle and buffaloes are of commercial importance, these have been discussed in this publication.

2.1. World Production of Raw Hides

The annual production of raw hides in certain important countries of the world is given in the following table:

TABLE 1

Production of hides in certain countries of the world

Country	Cattle population (thousands)	Hide production (thousands)	Percentage of hides to total cattle population
1	2	3	4
	(1961-62)	(1962)	
Belgium	2,832	990	35.0
Bulgaria	1,582	408	25.8
Finland	2,152	967	44.9
Greece	1,109	422	38.1
Hungary	1,987	595	29.9
Italy	9,665	5,523	57.1
Netherlands	3,817	1,535	40.2
Poland	9,589	4,329	45.1
Spain	3,539	1,231	34.8
Sweden	2,661	1,095	41.1
United Kingdom	11,859	3,932(c)	33.2
Yugoslavia	5,884	1,949	33.1
Canada	10,940	2,008	18.4
Mexico	21,100	2,499	11.8
United States	100,002	34,759(d)	34.8
Argentina	43,300	12,931	29.9
Uruguay	8,835	1,362	15.4
Burma	5,307	700	13.2
India	226,987(a)	23,296(b)	10.3
Iraq	1,550	234	15.1
Japan	3,334	814	24.4
Pakistan	24,064	6,925	28.8
Turkey	12,097	1,567	13.0
South Africa	12,411	1,234	9.9

	1	2	3	4
Tanganyika		8,176	1,420	17.4
Uganda		3,365	665	19.8
Australia		18,033	5,139	28.5
New Zealand		6,598	2,161	32.8
TOTAL		562,775	120,690	21.4

Source : F.A.O. Production Year Book, 1963.

(a) Includes buffaloes.

(b) Includes buffalo hides.

(c) Converted at the rate of 1,000 cattle hides=25 metric tonnes and 1,000 calf skins=5 metric tonnes.

(d) Number of cattle slaughtered as given in C.F.C. Meat, 1964.

Most of the hides obtained abroad are from slaughtered stock. It will be seen from the last column of the above table that the proportion of cattle population slaughtered annually is quite appreciable in most of the countries.

2.2. Domestic Production

As mentioned earlier, the majority of hides available in India are from fallen stock.

2.3. Methods of Assessment

Accurate statistical data regarding the production of hides in the country are not available. The factors on which the production depends are (a) the bovine population of the country, (b) annual mortality, and (c) the number of animals slaughtered annually, and these are discussed in the following paragraphs.

(a) *Livestock population.*—The bovine population according to the livestock censuses of 1956 and 1961 is given in Table 2.

TABLE 2
Bovine population (in lakhs)

	1956	1961
Cattle	1,586.51	1,758.37
Buffaloes	449.16	511.50

It will be observed that India possesses about 18 crores of cattle and 5 crores of buffaloes. Compared to the world's bovine population, India possesses more than one-fifth and one-half of cattle and buffaloes respectively.

(b) *Annual mortality.*—The records of cattle mortality maintained by the State Animal Husbandry/Veterinary Departments generally show deaths due to contagious diseases only. Even these figures cannot be regarded as complete as mortality is recorded only in the case of deaths due to certain specific diseases. In many villages even mortality on account of contagious diseases is neither reported to the authorities nor recorded, because under village conditions the disease may not always be diagnosed before death.

Estimates of annual mortality of cattle and buffaloes in each State were arrived at after taking into account the average life span of the two species of animals. Data supplied by the Animal Husbandry/Veterinary Departments reveal that the average life span for the same species of animals varied from State to State. In the case of cattle it ranged between 8 and 12 years and the all-India average worked out to 10.6 years. The average age of buffaloes ranged between 7 and 12 years with an all-India average of 9.8 years.

Hides of all animals which die are not necessarily claimed. The handling of the dead and its flaying are almost exclusively done by a special class of people known as *chamars*, *dheds* and *raighars* in the North and *vettians* and *madigas* in the South.

Ordinarily these persons are found in most of the villages, but sometimes they may not be available. Arrangements for flaying the dead animal are, therefore, not always possible as the *chamar* may not be able to reach in time to remove the hide in good condition. When an animal dies in an out-of-the-way place, or in a jungle, it may not be possible to send for the *chamar* at all. So much so, that when an animal dies in the jungle no one may even come to inform the *chamar*, with the result that very often putrefaction sets in or the hide is torn by vultures, jackals, etc., and is not worth claiming. In certain parts of India large quantities of hides are annually lost when cattle are drowned due to floods.

Although it is known that losses of this nature take place throughout the country, the task of estimating them with any degree of accuracy is extremely difficult. Enquiries show that these losses varied in different parts of the country and ranged between 4 and 10 per cent of the fallen hides. Approximately 10 to 25 lakh pieces of hides are thus lost annually in India which, in terms of cash value, cost about 2 to 4 crore rupees every year. Under conditions peculiar to India, where only a particular class of people can handle carcasses and flay them, a major portion of the wastage is unavoidable particularly in view of the fact that the commodity concerned is highly perishable in its green condition. However, with a rise in the prices of hides more and more people are becoming conscious of the economic importance of hides and more efforts are being made to salvage these fallen hides.

(c) *Number of animals slaughtered.*—The number of animals slaughtered annually was also taken into consideration for arriving at the all-India total.

According to the trade description, a slaughtered hide is not necessarily the hide of an animal that was slaughtered. It may be a good quality fallen hide that was removed soon after death and also well flayed and preserved.

The estimates of the number of animals slaughtered in various States were based on the figures furnished by the State Animal Husbandry Departments. In the case of slaughtered hides, it may be safely said that there is no loss in collection and all of them reach the markets.

2.4. Production of Kips

Hides obtained from Zebu cattle, that is, hides of cows, bullocks, bulls and calves, are different from hides of buffaloes and have various trade names like cow hides, oxen hides, cattle hides, East Indian kips, kips, etc. In foreign trade, hides of large and fully grown animals are termed 'hides' and those of under-sized or semi-mature animals are called 'kips'. Generally, hides weighing less than 25 lb. in green state and 12 lb. in dry state are classified as kips. The weight of the Zebu cattle hide from many parts of India is low as compared with the standard weight of hides in Europe and America and the term 'kip' is widely used for Indian Zebu cattle hides. In this Report the term 'kips' is used throughout to represent the Zebu cattle hides although some of them may be heavier than the standard kip weight.

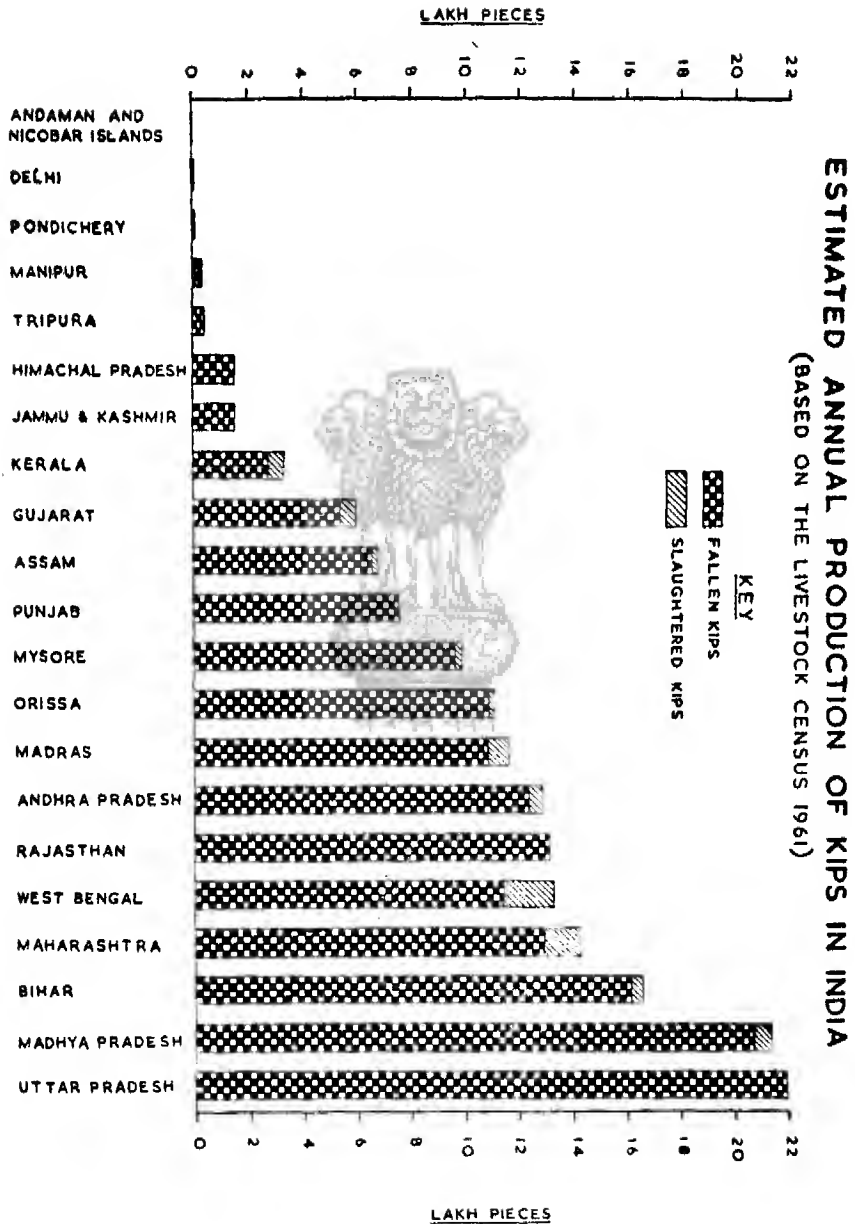


Table 3 on page 8 gives the number of kips, fallen and slaughtered, produced in the different States of India. The corresponding figures of cattle population are also given for each State.

The total annual production of kips in India is estimated at 1.74 crore pieces, comprising 95.7 per cent of fallen hides and 4.3 per cent of slaughtered hides. The annual kip production works out to approximately 9.9 per cent of the total population of cattle, *viz.*, cows, bullocks, bulls and young stock, based on the cattle census of 1961.

The figures of production of kips in different States of India are diagrammatically illustrated in the chart facing page 6. Production of hides varies from tract to tract, depending as it does on a number of local factors such as cattle population, method of rearing and management, availability and type of fodder, annual mortality, climate and the number of beef eating people in an area, and, finally, restrictions on slaughter or its prohibition.

Madhya Pradesh and Uttar Pradesh together account for nearly 25 per cent of the country's production of hides. The proportion of fallen hides to the total varies greatly in different parts of India.

The proportion of slaughtered kips to the total cattle population was only 0.4 per cent in 1961 as against 1.4 per cent in 1948. The proportion has declined as a result of the ban imposed in different States on the slaughter of cattle.

A summary of the legislation in this respect passed by the States can be seen at Appendix I.

2.5. Production of Buff Hides (Hides of Buffaloes and their Young Stock)

Buffalo hides are a class by themselves. In the trade they are also known as buff hides and buffs. In this Report they are termed as buffalo hides or buff hides and include the skins of buffalo calves or *kataras*.

Buffaloes represent only 22.5 per cent of the total number of bovines in the country, and consequently, the production of buffalo hides is small as compared to kips. The annual production of buff hides works out to 11.6 per cent

TABLE 3
Estimated annual production of kips in India*

State	Total cattle population (1961) (thousands)	Percentage of fallen hides to total population	Percentage of slaughtered hides to total population	Number of fallen hides produced (thousands)	Number of slaughtered hides produced (thousands)	Total kips produced (thousands)	Percentage to total
Andaman & Nicobar Islands . . .	7	14.3	Neg.	1	Neg.	1	Neg.
Andhra Pradesh . . .	12,345	10.0	0.4	1,235	52	1,287	7.4
Assam . . .	6,584	10.0	0.3	658	22	680	3.9
Bihar . . .	16,104	10.0	0.3	1,610	46	1,656	9.5
Delhi . . .	89	7.9	..	7	..	7	Neg.
Gujarat . . .	6,553	8.3	0.8	546	54	600	3.5
Himachal Pradesh . . .	1,213	12.5	..	152	..	152	0.9
Jammu & Kashmir . . .	1,831	8.4	..	153	..	153	0.9
Kerala . . .	2,753	10.0	2.2	275	60	335	1.9
Laccadive, etc., Islands . . .	1	Neg.	..	Neg.	..	Neg.	Neg.
Madhya Pradesh . . .	24,774	8.5	0.3	2,065	70	2,135	12.3
Madras . . .	10,817	10.0	0.7	1,082	77	1,159	6.7
Maharashtra . . .	15,526	8.3	0.8	1,294	127	1,421	8.2
Manipur . . .	268	8.2	3.7	22	10	32	0.2
Mysore . . .	9,659	10.0	0.3	966	27	993	5.7
Orissa . . .	9,810	11.1	0.2	1,090	20	1,110	6.4
Pondicherry . . .	80	10.0	N.A.	8	N.A.	8	Neg.
Punjab . . .	6,053	12.5	..	757	..	757	4.4
Rajasthan . . .	13,140	10.0	..	1,314	..	1,314	7.6
Tripura . . .	481	10.0	..	48	..	48	0.3
Uttar Pradesh . . .	26,284	8.3	..	2,190	..	2,190	12.6
West Bengal . . .	11,465	10.0	1.6	1,146	180	1,326	7.6
TOTAL INDIA . . .	175,837	9.5	0.4	16,619	745	17,364	100.0

*Based on the Livestock Census, 1961.

TABLE 4
Estimated annual production of buffalo hides in India*

State	Total buffalo population (1961) (thousands)	Percentage of fallen hides to total population	Percentage of slaughtered hides to total population	Number of fallen hides produced (thousands)	Number of slaughtered hides produced (thousands)	Total buffalo hides produced (thousands)	Percentage to total
Andaman & Nicobar							
Islands.	8	12.5	Neg.	1	Neg.	1	Neg.
Andhra Pradesh.	6,949	12.5	0.3	869	21	890	13.0
Assam	572	10.0	0.6	57	..	57	1.0
Bihar	3,698	14.3	0.6	528	23	551	3.3
Delhi	61	8.2	39.3	5	24	29	0.5
Gujarat	2,915	8.3	0.5	243	14	257	4.3
Himachal Pradesh	208	12.5	..	26	..	26	0.4
Jammu & Kashmir	401	8.5	..	34	..	34	0.6
Kerala	485	8.2	0.6	40	3	43	1.7
Laccadive, etc.,							
Islands.							
Madhya Pradesh	5,576	8.3	..	465	17	482	8.1
Madras	2,574	12.5	0.2	322	5	327	5.5
Maharashtra	3,134	8.3	1.1	261	33	294	5.0
Manipur	52	13.5	11.5	7	6	13	0.2
Mysore	3,022	8.3	0.2	252	5	257	4.3
Orissa	1,075	12.5	0.1	134	1	135	2.3
Pondicherry	11	9.1	N.A.	1	N.A.	1	Neg.
Punjab	4,426	12.5	..	553	15	553	9.3
Rajasthan	4,019	10.0	0.4	402	..	417	7.0
Tripura	43	11.6	..	5	..	5	0.1
Uttar Pradesh	10,973	8.3	4.7	914	513	1,427	24.1
West Bengal	948	12.6	1.5	119	14	133	2.3
TOTAL INDIA	51,150	10.2	1.4	5,238	694	5,932	100.0

*Based on the Livestock Census, 1961.

of the total buffalo population. Statistics regarding the production of buffalo hides in various States of India are given in Table 4 on page 9.

The total annual production of buffalo hides in India is about 59 lakhs in 1961 as against 48 lakhs in 1948. The percentages of dead and slaughtered buff hides to total buff hides are 88.3 and 11.7 respectively. The proportion varies considerably in different States and the reasons for these differences are generally the same as those for kips. The State-wise production of buff hides is shown graphically in the diagram facing this page.

Uttar Pradesh and Madhya Pradesh together account for 32.2 per cent of the country's production of buffs.

The production of slaughtered hides is practically confined to 15 States. The largest number of slaughtered hides is produced in Uttar Pradesh which annually accounts for more than 14 lakh pieces of buff hides (slaughtered and fallen) in India.

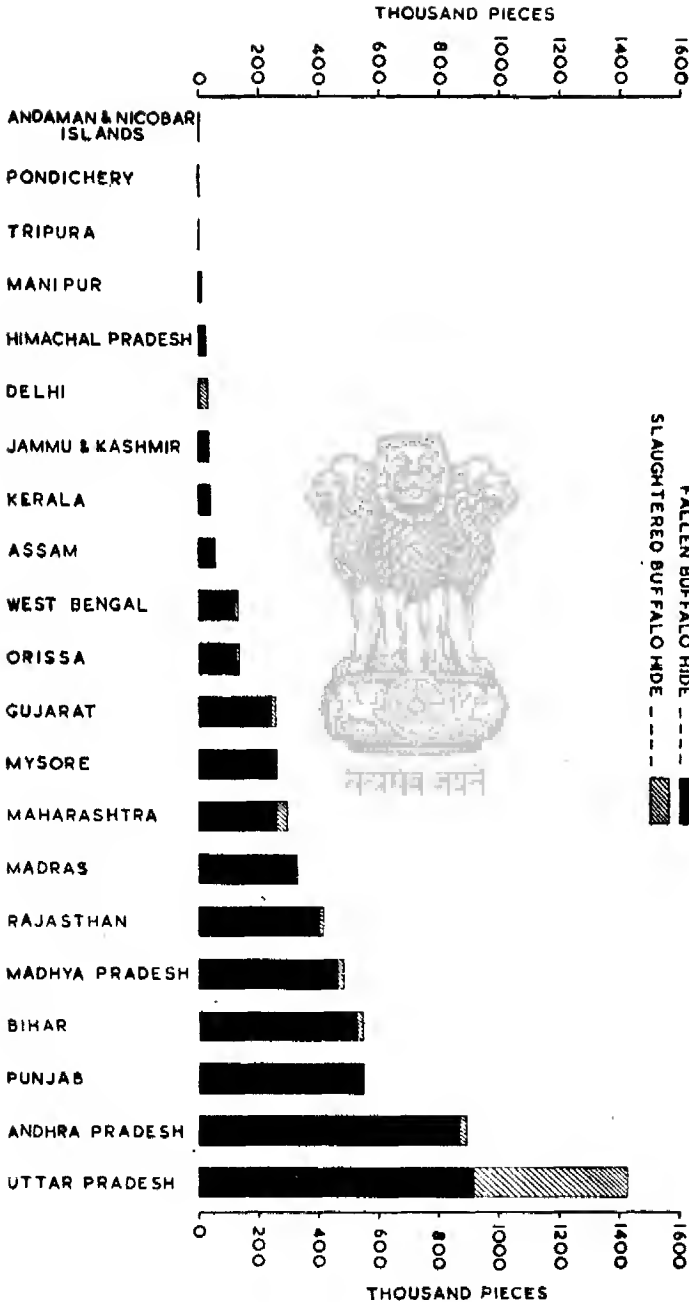
Details regarding the production of kips and buff hides in India are given in Appendix II and are summarised in the table below:

TABLE 5
Production of Indian hides in 1961

Type	Annual production			Percentage to total Indian production	No. of animals in 1961 (lakhs)	Percentage of hides to animal population
	Fallen (lakhs)	Slaughtered (lakhs)	Total (lakhs)			
Kips	166.19 (95.7)	7.45 (4.3)	173.64 (100.0)	74.5	1,758.4	9.9
Buff-hides	52.38 (88.3)	6.94 (11.7)	59.32 (100.0)	25.5	511.5	11.6
Total	18.57 (93.8)	14.39 (6.2)	232.96 (100.0)	100.0	2,269.9	10.3

Figures in brackets indicate percentages to total.

ESTIMATED ANNUAL PRODUCTION OF BUFFALO HIDES IN INDIA (BASED ON THE LIVESTOCK CENSUS 1961)



The total production of hides in India is estimated at 2.33 crore pieces of which kips constitute 74.5 per cent and buff hides 25.5 per cent. The proportion of fallen and slaughtered hides is 93.8 per cent and 6.2 per cent respectively. The annual production of hides to the total population of bovines in the country thus works out to 10.3 per cent.

The annual value of the country's output of hides, at an approximate price of Rs. 15 per kip and Rs. 20 per buff hide, therefore, amounts to nearly Rs. 37.9 crores.

2.6. Seasonal Variations

(a) *Fallen hides.*—The seasonal variations in the production of fallen hides depend mostly on local conditions of the area concerned. Scarcity of fodder, famine or outbreak of epidemics amongst cattle account for most deaths. Data available in regard to cattle mortality are far from complete in most areas. Deaths from certain contagious diseases are recorded in some areas but these comprise only a small fraction of the annual cattle mortality with the result that these do not give a correct indication about the periodicity of production.

However, enquiries have shown that, generally, production of fallen hides is the lowest during the early part of the year, i.e., between January and March and rises gradually during summer, being at its peak during monsoon, viz., in July/August. The increase in summer is due to the general scarcity of fodder and water in several parts. Although there is an improvement in grazing conditions during monsoon, some animals, reduced previously to a semi-starved condition, succumb during this period. Deaths also occur due to the animals eating poisonous plants and rank grass in larger quantities during this part of the year. Floods also have their own part to play in bovine mortality.

(b) *Slaughtered hides.*—Seasonal variations in the production of slaughtered hides naturally depend on the demand for beef. Slaughter of cattle is further limited by the ban on cattle slaughter imposed in various States. India being a tropical country, consumption of beef is much less during summer than in winter.

The following table shows the seasonal variation in the slaughter of cattle and buffaloes in certain selected slaughter houses:

TABLE 6
Seasonal variation in the slaughter of cattle and buffaloes

Month :	Number of cattle and buffaloes slaughtered*	Percentage to total
April	14,248	7.4
May	15,596	8.1
June	15,404	8.0
July	15,982	8.3
August	15,789	8.2
September	15,596	8.1
October	16,944	8.8
November	15,981	8.3
December	17,522	9.1
January	16,752	8.7
February	16,559	8.6
March	16,174	8.4
TOTAL	192,547	100.0

*In Ahmedabad, Bombay, Delhi, Hyderabad, Kanpur and Madras slaughter houses during 1958-59. Figures for Delhi and Kanpur relate to buffaloes only.

Before World War II, quite a large number of useless animals, including male buffalo calves, used to be slaughtered during the dry winter months at Agra, Delhi and Saugor for the preparation of Jerked meat or *Biltong* for export. Nearly 60,000 maunds of such dried meat used to be sent out every year to Burma, for which about 60,000 animals were killed. In 1941-42, when Burma was involved in war, this trade completely ceased and has not since been revived. By this, India has not only lost the trade in *Biltong* but is also losing quite a large sum, which she was

earning from the by-products, viz., hides, bones, blood, guts, of the above trade. Besides, old and useless animals wander over the country and consume fodder which could have been otherwise available to the more useful animals. Further, if an animal is allowed to live its full span of life and die a natural death, its hide becomes spongy, bones porous and blood smaller in quantity. This problem, therefore, needs serious consideration.

The table below gives the number of cattle and buffaloes in 1951, 1956 and 1961 in the tracts covered by the cattle census.

TABLE 7
Trend of cattle population in India

	(Number in thousands)		
	1951	1956	1961(*)
Total cattle and buffaloes including their young stock	198,640	203,566	226,987
Percentage increase (+) or decrease (-) over 1951 . . . . .	..	+2.5	+14.3
Percentage increase (+) or decrease (-) over the previous census . . . . .	..	+2.5	+11.5

(*) Provisional.

The figures in the above table indicate that during the five-year period between 1951 and 1956 the bovine population increased only by 2.5 per cent. The increase during the succeeding quinquennium, viz., from 1956 to 1961 was, however, 11.5 per cent. The increase during the decade ending 1961 was 14.3 per cent. It may be assumed that the production of hides has also more or less kept pace with the rise in the bovine population.

Numerous factors like the ravages of occasional famines which take a heavy toll of cattle and buffalo life, the activities of veterinary departments, which prevent or cure bovine diseases and thereby reduce deaths among bovines and the increase or decrease in the slaughtering of cattle for food have a swaying influence on cattle population.

Effects of famine.—As most of the cattle in the villages depend on grazing or on straw obtained as a by-product of certain crops, long droughts or famine conditions severely influence the availability of fodder, etc., and

consequently cattle mortality. Although data on cattle mortality due to famines are not available, it may be presumed that there is an abnormal increase in mortality during such periods as a result of which more hides become available.

Veterinary activities.—During the last 30 or 35 years the activities of the Veterinary or Animal Husbandry Departments have been fast expanding and cover various aspects of animal husbandry including disease control, breeding, feeding, management, etc., of livestock. These, therefore, have their own part to play in bringing down the rate of mortality amongst livestock.

Increase or decrease in slaughtering.—Complete and accurate data on this subject are not available. However, it is gathered that the number of bovines that are killed for food is on the decline. The annual slaughtering in some important city slaughter houses are shown in the table below:

TABLE 8
*Number of cattle and buffaloes slaughtered in certain slaughter houses**

Year	No. of cattle and buffaloes slaughtered	Percentage increase (+) or decrease (–) over 1952-53
1952-53	231,877	
1953-54	238,313	+2.8
1954-55	232,776	+0.4
1955-56	236,922	+2.2
1956-57	238,843	+3.0
1957-58	238,842	+3.0
1958-59	238,742	+3.0

*Figures relate to the number of cattle and buffaloes slaughtered in Ahmedabad, Bombay, Calcutta, Delhi, Hyderabad and Madras slaughter houses. Figures for Delhi relate to buffaloes only.

As the figures relate only to certain slaughter houses, no definite conclusion can be drawn on the trend based on these figures. However, from the figures of slaughter in certain slaughter houses it may be said that the figures of slaughter of bovines in these slaughter houses have remained more or less stationary.

3. IMPORTS OF HIDES AND LEATHER

India being a surplus producing area, it is only natural that the imports of hides and leather into this country are comparatively small.

Statistics regarding the imports and exports of hides and leather are classified under three main groups, viz., (i) raw hides, (ii) tanned or dressed hides, and (iii) unwrought leather. The term 'raw hides' covers wet-salted, dry-salted and air-dried hides. These are the names given to raw hides which are preserved temporarily by different methods to prevent putrefaction until they reach the tanner. Vegetable tanned hides are termed tanned or dressed hides. Chrome tanned leather, e.g., box, willow calf or sides, etc., used for making the uppers of boots and shoes and other light goods, is generally called unwrought leather.

The total imports of raw hides and leather into India during the year 1964-65 are given in the table below:

TABLE 9
Imports of raw hides and leather into India during the year 1964-65

	Raw hides		Unwrought leather	
	Metric tonnes (1)	Thousand pieces (2)	Metric tonnes (3)	Thousand pieces (4)
Imports	9,955.5	1,447.8	1,053.6	774.3

Tanned or dressed hides		Total	
Metric tonnes (5)	Thousand pieces (6)	Thousand pieces (7)	Value (Thousand rupees) (8)
20.3	6.4	2,228.5	20,348.2

Conversion rate.—Cow hide 1 kg.=0.19684 piece. Buff hide 1 kg.=0.09842 piece. Cow calf skin 1 kg.=0.27558 piece. Buff calf skin 1 kg.=0.25589 piece. Unwrought leather 1 kg.=0.73487 piece. Hides tanned or dressed 1 kg.=0.31495 piece.

It will be observed from the above table that the total imports of raw hides and leather into India were of the order of 22.8 lakh pieces valued at over Rs. 2 crores.

The import duty also influences imports. It may be stated here that the standard rates of duty payable on the imports of raw hides into India vary with different types of cure. This may be seen from the following table:

TABLE 10
*Import tariff**

Name of article	Nature of duty	Standard rate of duty	Preferential rate of duty, if the article is the produce or manufacture of		
			The United Kingdom	A British colony	Burma
1. Hides not otherwise specified.	Revenue	35% ad valorem.	..	..	10% ad valorem.
2. Hides raw or salted	..	Free	..	..	..
3. Unwrought leather	Revenue	75% ad valorem.	..	..	10% ad valorem.
4. The following leather manufactures, namely, saddlery, harness, trunks and bags.	Revenue	100% ad valorem.	..	..	10% ad valorem.
5. Manufactures of leather not otherwise specified.	Revenue	100% ad valorem.	..	..	10% ad valorem.

*Extracted from "Indian Customs Tariff" (Fifty-second issue), issued by the Department of Commercial Intelligence and Statistics, Calcutta, as in operation on the 30th June 1962.

3.1. Raw Hides

(i) *Trend*.—The annual imports of raw hides into India through land frontier and sea routes for the sixteen years ending 1964-65 are given in the table below:

TABLE 11
Trend of imports of raw hides into India

Year	Quantity (metric tonnes)	Value (thousand rupees)
1949-50	3,673.0	5,405.1
1950-51	6,695.4	13,116.5
1951-52	5,153.7	8,804.8
1952-53	3,727.0	5,802.0
1953-54	3,504.5	6,958.6
1954-55	5,503.1	8,462.4
1955-56	8,883.2	14,640.7
1956-57	8,770.9	10,807.4
1957-58	4,476.2	7,272.5
1958-59	11,181.8	11,319.9
1959-60	8,203.3	14,867.5
1960-61	8,399.5	17,766.8
1961-62	8,029.9	17,442.2
1962-63	8,124.6	18,218.6
1963-64	11,845.2	23,226.1
1964-65	9,955.5	19,909.3
Average of 16 years ending 1964-65	7,257.9	12,751.3

Source : Monthly Statistics of the Foreign Trade of India, Indian Trade Journal, etc.

Note.—Value of imports from Nepal, Tibet, Sikkim and Bhutan have been estimated as two-thirds of the value of imports by sea.

During the sixteen-year period ending 1964-65, annual imports of raw hides were the highest during the year 1963-64 when 11,845.2 metric tonnes were imported. The lowest imports were during 1953-54, viz., 3,504.5 metric tonnes. The average annual imports for the period under review were 7,257.9 metric tonnes. It will also be observed that the annual imports have shown wide fluctuations

during the sixteen years and the increase or decrease has not been steady.

(ii) *Periodicity*.—The seasonal variations of the imports of raw hides into India may be seen from the following table:

TABLE 12

Monthly imports (percentages) of raw hides into India for the year ending March 1965

Month	Percentages to total annual imports	
	1964-65	Average of 3 years ending 1964-65
April	9.2	7.5
May	11.3	9.0
June	13.3	12.9
July	7.9	7.9
August	8.8	6.1
September	6.5	6.0
October	4.6	6.3
November	6.6	6.7
December	9.2	9.9
January	6.1	9.6
February	7.1	7.3
March	9.4	10.8
TOTAL	100.0	100.0

It will be observed from the above table that during the year 1964-65 monthly imports ranged from 4.6 per cent (in October 1964) to 13.3 per cent (in June 1964). During the months of September, October, November and January, imports have been proportionately less. The imports during each of the remaining eight months have been more than 7 per cent.

The picture, when three years' average is taken into consideration, is a little different. The imports are at their peak in June (12.9%) and are lowest during September (6.0%). The extent of the local demand and the shipping facilities for exporting the hides from the consigning countries are mainly responsible for seasonal variations.

(iii) *Sources.*—Sources of raw hides imported into India during the year 1964-65 are given in the table below:

TABLE 13
Imports of raw hides into India (1964-65)

Countries of consignment	Quantity		Value		Price per kilogram
	Metric tonnes	Percentage to total	Thousand rupees	Percentage to total	
					Rs. P.
Australia . . .	166.5	1.7	271.7	1.4	1.63
Burma . . .	498.0	5.0	548.9	2.8	1.10
Ceylon . . .	672.9	6.8	679.0	3.4	1.01
Ethiopia . . .	8.3	0.1	5.5	Neg.	0.66
Federation of Malaya	576.1	5.8	1,214.9	6.1	2.11
France . . .	23.5	0.2	87.8	0.4	3.74
Hongkong . . .	140.2	1.4	383.2	1.9	2.73
Italy . . .	303.4	3.0	908.3	4.6	2.99
Kenya . . .	71.3	0.7	194.9	1.0	2.73
New Zealand . .	21.4	0.2	46.1	0.2	2.15
Pakistan . . .	3,752.9	37.7	7,339.9	36.9	1.96
Rhodesia . . .	170.6	1.7	209.3	1.0	1.23
Singapore . . .	257.0	2.6	404.9	2.0	1.58
Thailand . . .	3,263.1	32.8	7,519.7	37.8	2.30
United Kingdom .	18.8	0.2	75.0	0.4	3.99
United States . .	11.5	0.1	20.2	0.1	1.76
TOTAL . . .	9,955.5	(100.0)	19,909.3	(100.0)	2.00

It will be observed that nearly 38 per cent of the imports during 1964-65 was from Pakistan and 33 per cent from Thailand. Ceylon contributed 6.8 per cent, Malaya 5.8 per cent, Burma 5.0 per cent and Italy 3.0 per cent of the total. It will also be seen that the highest price was paid

for the hides from the U.K., France and Italy. Hides from Kenya and Hongkong fetched high prices though these were lower than those fetched by hides from the U.K., France and Italy.

3.2. Unwrought Leat...

Unwrought or finished but not manufactured leather mainly consists of box and willow calf and sides, glace kid and patent leathers used for making attache cases, uppers of boots and shoes, hand bags, etc. This leather is sold mainly on measurement (per sq. ft.) basis.

(i) *Trend.*—The annual imports of unwrought leather into India during the sixteen-year period ending 1964-65 are given below:

TABLE 14
Imports of unwrought leather into India

Year	Quantity		Value (Thousand rupees)
	Metric tonnes	Thousand pieces*	
1949-50	1,860.0	1,366.9	791.9
1950-51	969.2	712.2	459.4
1951-52	1,361.0	1,000.2	664.4
1952-53	1,415.3	1,040.1	691.7
1953-54	2,185.1	1,605.8	877.8
1954-55	2,119.5	1,557.6	678.0
1955-56	2,215.2	1,627.9	671.0
1956-57	2,482.2	1,824.1	809.9
1957-58	379.5	278.9	146.8
1958-59	734.2	539.6	227.0
1959-60	765.1	562.2	225.2
1960-61	653.5	480.2	226.9
1961-62	776.9	571.0	274.3
1962-63	1,184.5	870.4	380.0
1963-64	983.2	722.5	298.3
1964-65	1,053.6	774.3	366.0
Average of 16 years ending 1964-65	1,321.1	970.9	486.8

*At the rate of 3 lb. per piece.

Source : Monthly Statistics of the Foreign Trade of India.

It will be observed from the above table that, as compared to 1949-50, there was a sudden and steep fall in imports in 1950-51 which was followed by a gradual rise till 1956-57 when it touched the peak figure of over 2,400 metric tonnes. Again in 1957-58 the drop was very marked, the quantity imported being less than a sixth of the quantity imported in the previous year. However, during the subsequent years imports had risen gradually but were not even half of what they were in 1949-50 except during the three years ending 1964-65. The trend, thus, indicates that most of the country's requirements of unwrought leather is being met by local leather manufacturing units.

(ii) *Periodicity*.—The monthly imports of unwrought leather are shown in the following table:

TABLE 15
Monthly (percentages of) imports of unwrought leather into India

Month	Percentages to total	
	1964-65	Average of 3 years ending 1964-65
April	5.9	7.6
May	5.4	4.9
June	6.9	3.8
July	2.0	6.1
August	6.8	15.9
September	17.4	12.3
October	9.3	5.5
November	7.1	4.8
December	3.9	7.4
January	13.4	15.3
February	9.5	7.6
March	10.4	8.8
Total	100.0	100.0

Source. : Monthly Statistics of the Foreign Trade of India.

During 1964-65 the imports were at their peak in the month of September 1964 with the imports ranging from 17.4 per cent to 2.0 per cent in July 1964. The imports were fairly high during January, February, March and September.

When the figures for the average of three years are taken into consideration, the picture is somewhat different. The imports were at their peak during August and were the lowest during June and range from 15.9 per cent to 3.8 per cent.

The seasonal fluctuations in the imports were mainly due to the seasonal demand for leather goods and the shipping facilities for exporting the leather from the consigning countries.

(iii) Sources.—The share of different countries from which unwrought leather was imported into India during the three years ending 1964-65 and during the triennium ending 1954-55 respectively is given in Table 16 on page 23.

It will be observed from the figures given in the table that Australia occupied a predominant position in the imports of unwrought leather during the triennium ending 1964-65 contributing 84.6 per cent of the total annual imports into India with Norway and the U.S.A. coming next, accounting for 7.0 and 4.1 per cent respectively. The share of the U.K. was 3.6 per cent and that of New Zealand was less than 1 per cent. During the triennium ending 1954-55 the share of the U.S.A. in the annual imports into India of unwrought leather was 36.8 per cent, followed by Australia and the U.K. (32.5 per cent and 22.2 per cent respectively). It is thus seen that the U.S.A. and the U.K. were important as suppliers of unwrought leather ten years ago while Australia has taken their place recently.

3.3. Tanned or Dressed Hides

India being a large exporter of tanned or dressed hides herself, imports of these are unimportant.

TABLE 16

Relative share of the imports of unwrought leather into India supplied by different countries

	Average of three years ending 1964-65			Average of three years ending 1954-55		
	Quantity (metric tonnes)	Percentage to total	Value (thousand rupees)	Quantity (metric tonnes)	Percentage to total	Value (thousand rupees)
United Kingdom	38.9	3.6	22.8	423.9	22.2	173.3
United States	43.8	4.1	14.2	701.3	36.8	284.9
Norway	74.9	7.0	18.1	12.7	0.6	3.8
Australia	907.9	84.6	270.5	618.9	32.5	236.2
New Zealand	4.5	0.4	1.5	15.0	0.8	5.4
Others	3.7	0.3	21.0	134.9	7.1	45.6
TOTAL	1,073.7	100.0	348.1	1,906.7	100.0	749.2
						106.8

The imports of tanned or dressed hides into India during the sixteen years ending 1964-65 are given below:

TABLE 17
Imports of hides, tanned or dressed, into India

Year	Quantity (metric tonnes)	Value (thousand rupees)
1949-50	1.0	1.7
1950-51	4.1	10.0
1951-52 . . . .	..	2.4
1952-53 . . . .	..	3.3
1953-54	0.5	7.5
1954-55	6.8	17.7
1955-56	0.1	0.4
1956-57	165.2	238.5
1957-58	110.4	293.9
1958-59	78.2	379.8
1959-60	51.0	95.5
1960-61	9.3	6.3
1961-62	52.3	94.0
1962-63	29.3	67.7
1963-64	33.5	58.1
1964-65	20.3	72.9
Average of 16 years ending 1964-65	34.8	84.4

Source : Monthly Statistics of the Foreign Trade of India.

4. EXPORTS OF HIDES AND LEATHER

4.1. Total Exports

Before World War II, India's exports of hides were enviable, both in quality and in quantity. She used to export specially light cattle hides known as kips and her exports were also the largest.

The exports of buffalo hides, buffalo calf skins, cow hides and cow calf skins are not allowed now. The exports of hides and leather from India during the year ending 31st March 1965 and during 1949-50 are shown in the table below:

TABLE 18
Total exports of raw hides and leather from India

Year	Raw hides (metric tonnes)	Hides tanned or dressed (metric tonnes)	Unwrought leather (metric tonnes)	Total (metric tonnes)	Total value (thousand rupees)
1964-65 . .	2.6	9,315.5	1,545.7	10,863.8	76,879.5
1949-50 . .	795.6	15,918.4	297.9	17,011.9	92,967.4

As the export of raw hides, kips, calf skins and buffalo-calf skins is totally banned, exports of these during 1964-65 were negligible.

Compared with 1949-50 there has been a marked decline in the exports of tanned or dressed hides. However, in the case of unwrought leather it is seen that there has been a five-fold increase during the 16-year period. It is also seen that the total value of the annual exports has gone down by Rs. 1.6 crores during 1964-65 as compared to 1949-50.

4.2. Restrictions on Export of Hides from India*

The export of the following varieties of hides is controlled. Applications for the export of buffalo hides, buffalo-calf skins, cow hides and cow calf skins are considered on

*Source : "Handbook of Export Promotion", Sixth Edition, 1965.

an *ad hoc* basis in consultation, wherever necessary, with the authorities concerned, having regard to the following criteria:

- (i) supply position in the country ;
- (ii) ability of the applicant to handle the export business ;
- (iii) foreign exchange earnings likely to be earned by the export ; and
- (iv) other relevant factors.

4.3. Export Duty

There is no duty on the exports of tanned or dressed hides or unwrought leather from India, but a cess of $\frac{1}{2}$ per cent *ad valorem* is leviable on all raw cow and buffalo hides (excluding calf skins) exported.

4.4. Export of Tanned or Dressed Hides

Tanned or dressed hides are vegetable tanned and are imported by the curriers and dressers in different countries for processing into finished leather.

(i) *Trend*.—The quantities of tanned or dressed hides annually exported from India during the sixteen years ending 1964-65 are given in the following table:

TABLE 19

*Exports of tanned or dressed hides from India**

Year	Quantity (metric tonnes)	Value (thousand rupees)
1	2	3
1949-50	15,918.4	84,999.1
1950-51	17,806.2	1,20,092.6
1951-52	17,012.7	1,36,006.9
1952-53	15,887.6	92,189.6
1953-54	18,869.9	1,10,142.3
1954-55	14,688.0	87,820.8
1955-56	14,261.2	92,753.0
1956-57	13,572.8	75,369.9
1957-58	11,150.8	59,294.5
1958-59	10,233.0	57,204.0
1959-60	14,516.6	1,01,146.4

1	2	3
1960-61	11,558.8	73,975.3
1961-62	11,118.3	73,680.0
1962-63	10,710.4	72,850.0
1963-64	9,660.7	65,629.1
1964-65	9,315.5	58,402.0
Average of 16 years ending 1964-65	13,517.6	85,097.2

*Prior to January 1957 by land data were not separately specified and hence excluded from this table.

NOTE.—Excludes other hides.

It will be observed from the above table that the average annual export of tanned or dressed hides during the sixteen years ending 1964-65 was of the order of 13,517.6 metric tonnes valued at over Rs. 8.5 crores. The annual exports reached their peak in 1953-54 when the figure reached about 19 thousand metric tonnes, but started declining steadily until 1958-59 when they touched the lowest figure of 10.2 thousand metric tonnes valued at over Rs. 5.7 crores. There was a rise of about a third during 1959-60 as compared to 1958-59 but again there was a decline in the subsequent years.

(ii) *Periodicity*.—The monthly exports of tanned or dressed hides during the year 1964-65 and the average of three years ending 1964-65 are as under:

TABLE 20

Percentages of monthly exports from India of hides tanned or dressed

Month	1964-65	Average of 3 years ending 1964-65
April	7.1	9.3
May	14.1	11.3
June	8.1	9.8
July	6.9	7.7
August	7.4	8.0
September	8.9	6.7
October	6.9	7.0
November	7.6	7.6
December	8.2	8.3
January	8.3	8.3
February	7.4	7.7
March	9.1	8.3
TOTAL	100.0	100.0

It will be observed that the export of dressed hides did not follow any definite periodicity. However, it was fairly high during May, March, September, December and January. If the figures relating to the three years ending 1964-65 are considered, it is seen that the exports were high during April to June, December, January and March. It is also interesting to note that exports were more or less uniform and the fluctuations were only very slight.

(iii) *Destinations.*—The percentage share of principal countries importing tanned or dressed hides from India for the year 1964-65 and for the three years ending 1954-55 is shown in the table below :

TABLE 21

Percentage share of countries in the exports from India of tanned or dressed hides

Destination	1964-65	Average of three years ending 1954-55
	(Percentage to total)	(Percentage to total)
United Kingdom	92.0	93.5
West Germany	0.9	0.1
Aden	0.5	0.9
United States	3.7	1.7
Others	2.9	3.8
Total	100.0	100.0

It is observed that the United Kingdom has been by far the largest buyer of tanned or dressed hides from India, accounting for 92 per cent of the annual exports. When compared with those of the three-year period ending 1954-55, it is seen that there has been a decline in the share of the U.K. from 93.5 per cent. to 92.0 per cent. The United States of America which was formerly responsible for 1.7 per cent of Indian exports is now taking 3.7 per cent.

4.5. Export of Unwrought Leather

(i) *Trend.*—Due to the development of the chrome tanning industry in India during the last 40-45 years, and the preference which the United Kingdom gave after the Ottawa Agreement in 1932 to the tanned goods imported from India, the export of unwrought leather assumed great

importance. Very little chrome tanning was done in areas now in Pakistan. The following table shows the quantity of unwrought leather exported from India during the sixteen years ending 1964-65.

TABLE 22
Exports of unwrought leather from India

Years	Quantity (metric tonnes)	Value (thousand rupees)
1949-50	297.8	5,856.1
1950-51	161.4	3,803.0
1951-52	523.3	3,920.4
1952-53	584.8	1,573.4
1953-54	474.4	2,242.9
1954-55	492.7	1,795.5
1955-56	370.5	2,062.8
1956-57	1,090.9	4,810.2
1957-58	1,052.1	12,526.3
1958-59	901.2	13,007.1
1959-60	1,842.3	26,995.8
1960-61	1,253.4	17,229.3
1961-62	1,228.7	16,099.1
1962-63	777.8	10,689.8
1963-64	1,131.8	13,742.7
1964-65	1,545.7	18,462.3
Average of 16 years ending 1964-65	858.1	9,676.0

The annual exports of unwrought leather recorded a decline in 1950-51 but again rose in the following year and remained more or less steady till 1954-55. The year 1955-56 again recorded a fall only to be followed by a rise in the subsequent two years. There was again a fall in 1958-59 but exports reached their peak during 1959-60. This was followed by a decline till 1962-63 and by a rise thereafter. The average annual exports during the 16-year period was 858.1 metric tonnes valued at 96.8 lakh rupees.

(ii) *Periodicity.*—The percentages of the monthly exports from India of unwrought leather during the year

1964-65 and during the three-year period ending 1964-65 are given in the following table:

TABLE 23

Percentages of monthly exports from India of unwrought leather

Month	1964-65	Average of 3 years ending 1964-65
April	9.9	7.9
May	6.8	6.3
June	9.2	7.6
July	11.8	9.4
August	6.1	7.3
September	8.9	8.3
October	12.0	10.3
November	6.2	8.7
December	9.3	9.1
January	6.0	7.0
February	6.2	8.4
March	7.6	9.7
TOTAL	100.0	100.0

The exports of unwrought leather did not show any regularity in their seasonal variations. During 1964-65, it is seen that the maximum exports were during October, closely followed by July, April and December. January recorded the lowest. During the three years ending 1964-65 the peak was touched during October and the lowest during May.

(iii) *Destinations.*—The percentage share of exports of unwrought leather sent to different countries during the

year 1964-65 and during the three years ending 1954-55 (average) is shown in the table below:

TABLE 24
Percentage share of countries in the exports from India of unwrought leather

Destination	1964-65	Average of 3 years ending 1954-55
United Kingdom	43.4	86.8
Czechoslovakia	43.9	..
Australia	3.1	0.6
Aden	2.6	..
Saudi Arabia	1.2	..
Malaya Federation	1.2	..
Hongkong	1.1	0.1
United States	0.5	2.3
West Germany	0.5	3.0
Afghanistan	0.5	..
Singapore	0.3	Neg.
Japan	0.3	4.2
Pakistan	0.2	1.2
Poland	0.2	..
Jamaica	0.2	..
Cyprus	0.1	..
Yugoslavia	0.1	..
New Zealand	0.1	Neg.
Italy	0.1	..
Others	0.4	1.8
TOTAL	(100.0)	(100.0)

The United Kingdom has been the largest purchaser during the period 1952-53 to 1954-55. It is also observed that the share of the U.K. had decreased from 86.8 per cent in the triennium ending 1954-55 to 43.4 per cent in 1964-65.

4.6. Net Available Supplies in India

The following statistics for the year ending March 1965 show the net available supplies of hides in India.

TABLE 25

1. Production of raw hides

	Kips (thousands)	Buff hides (thousands)	Total (thousands)
(i) Fallen	16,619.0	5,238.0	21,857.0
(ii) Slaughtered	745.0	694.0	1,439.0
TOTAL	17,364.0	5,932.0	23,296.0
Less wastage in collection of fallen hides (2%)	332.4	104.8	437.2
Net total	17,031.6	5,827.2	22,858.8

	Metric tonnes	Pieces (thousands)
2. Imports		
(i) Raw hides	9,955.5	1,447.8
(ii) Unwrought leather	1,053.6	774.3
(iii) Tanned or dressed hides	20.3	6.4
TOTAL	11,029.4	2,228.5
Production plus imports . . . . .	..	25,087.3

3. Exports

(i) Raw hides	2.6	0.7
(ii) Tanned or dressed hides	9,315.5	2,933.9
(iii) Unwrought leather	1,545.7	1,135.8
TOTAL	10,863.8	4,070.4
Net available in India . . . . .	..	21,016.9

4. Total annual value

(i) Raw hides produced	Rs. 37.91 crores.
(ii) Raw hides, tanned or dressed hides and unwrought leather imported	Rs. 2.04 crores.
(iii) Raw hides, tanned or dressed hides and unwrought leather exported	Rs. 7.69 crores.

5. UTILISATION AND DEMAND

Hides and skins go into the manufacture of leather which has a multitude of uses both in war and peace. Their utilisation in the raw form is insignificant. In recent years, leather has been put to so many uses that in some countries special steps had to be taken to meet the extra demand. For example, in pre-War Germany new sources had to be tapped for the production of light leathers from skins of marine origin and these received special encouragement. Artificial leather and leather substitutes are also being used in increasing quantities in most countries. Artificial leathers generally consist of certain woven or non-woven fabrics coated with some polymeric substance and are suitably painted and grained to simulate the finish of real leather. Some of the substitutes consist of hard wearing fibre or pasteboards which are also finished to look like genuine leather and are used for making trunks, bags, suit-cases, etc. Cheaper canvas and natural and synthetic rubber shoes and rubber chappals are becoming more and more popular and are used by many in place of leather ones. But, for several special purposes, elegance and comfort, genuine leather has always held its own in almost all the countries of the world including India.

5.1. Utilisation of Leather for Articles of Common Usage

The hides and leather (including the number of pieces imported) that are available for use in India amount annually to 210.17 lakh pieces (please see page 32). Except for about 10.21 lakh hides used in raw condition all hides are tanned by different methods, before they are utilised by the manufacturers, large or small.

In the majority of Indian homes, the only articles of leather are generally one or two pairs of country pattern shoes. In foreign countries, on the other hand, people regularly use a variety of leather goods such as boots, shoes, suit-cases, bags, gloves, leather upholstery and even leather clothes. Industrially developed countries find many uses for leather, e.g., motor car manufacturing countries require large quantities of leather for upholstery. Heavy leather harness is required for horses in the agricultural operations in such countries. But, in India, only a pair of leather yoke-straps may be used for a plough or cart drawn by bullocks, and at times, even these are substituted by pieces of rope.

Reliable statistics regarding the quantities of leather used for different purposes are not available. Moreover, as the manufacture of leather articles is generally carried out on a small and scattered scale, there is considerable difficulty in estimating the quantities used for different purposes. With the recent developments as a result of the country's Five-Year Plans, the growth of cities and the mechanisation of agriculture, there has been a larger production of Western style shoes in the country. In the light of these and in the light of the data furnished by some State Governments the quantities of leather used for different purposes can be estimated as under:

TABLE 26

Leather (tanned from hides only) utilised annually for different types of articles used in India*

Articles	No. of pieces used annually (lakh)	Percentage to total
1. Country pattern shoes including <i>chappals</i> (sandals) .	94.57	45
2. Western style shoes	33.63	16
3. <i>Moth, charasa or kose</i> for drawing water from wells .	25.22	12
4. Leather straps and other articles of agricultural or industrial use	21.02	10
5. Suit-cases, bags, harness and saddlery and leather for repairs.	25.22	12
6. Ropes, etc., made from raw hides	10.51	5
TOTAL	210.17	100

*Leather made from skins is also used for making shoes, either alone or along with leather from hides.

According to the above estimates, 45 per cent of the net available supply of leather is used for making country pattern shoes. This is a reasonable estimate in view of the fact that a large proportion of the shoe wearing population goes in for country pattern shoes. This footwear is of diverse patterns which vary from region to region.

It has been estimated that about 16 per cent of the net available supply of leather is used for making Western style shoes. Incidentally it may be mentioned that use of shoes made of canvas or rubber, shoes with rubber soles, etc., has been on the increase in recent years, more so due to their cheapness.

The use of leather for making *charasa* or *kose* or large buckets for lifting water from wells for agricultural purposes is common in many areas where well irrigation is practised. In recent years, however, pump sets (electrically operated or mechanically operated) have become more and more popular and have been installed in many villages. The use of *charasa* or *kose* is more common in Western India than in the North where many wells are fitted with the "Persian wheel" in which practically no leather is used. It is also common to some extent to use leather (as it is known as *kavalai* in vernacular) for well irrigation in South India. In many areas of South India and Eastern India, again, animal power is not much used for lifting water from wells as men are employed to do the job with the help of metallic or wooden devices. It is estimated that about 25 lakh pieces are utilised annually for this purpose.

It is estimated that approximately a little over 21 lakh pieces of hides are required annually for making ropes, straps and other articles of agricultural or industrial use.

For making suit-cases, bags and other travel goods, saddlery of Western and country pattern, etc., about 25 lakh pieces or 12 per cent of the net available supplies are used.

Over 10 lakh pieces of raw hides or 5 per cent of the net available supplies directly find use in the making of ropes and many other articles for agricultural and industrial use.

5.2. Industrial Demand

The demand for leather for industrial uses may broadly be classified into internal or domestic demand and overseas demand. Now that the export of kips, buffalo hides, cow calf skins and buffalo calf skins is totally banned, there is no export of any hide in the raw state with the result that the demand for raw hides is only within the country.

Reliable statistics regarding the estimated annual demand for raw hides from the different groups of Indian industries are not available.

The chief demand for raw hides is from the tanning industry. There are about 33 organised big tanneries, mainly producing vegetable tanned leather and chrome uppers besides which there is a large number of small-scale tanneries engaged on the production of vegetable tanned East India kips in South India and chrome leather in and around Calcutta.

Apart from these, there are many village tanneries producing vegetable tanned hides and skins. In spite of recent developments towards modernisation, small tanneries producing the bulk of the tanned hides and skins predominate. The total number of tanneries in the country has been estimated at 724.

Broadly, the tanning industry can be classified into four different groups as under:

- (i) Organised tanneries producing vegetable and chrome tanned leather;
- (ii) Small-scale tanneries producing chrome upper leathers and vegetable tanned leather;
- (iii) Tanneries producing vegetable tanned leather, popularly known in the trade as 'East India tanned kips and skins'; and
- (iv) Village tanneries producing vegetable tanned leather.

According to available data, there are 33 organised tanneries* producing vegetable-tanned leather from buffalo and cow hides, of which ten produce chrome-tanned upper leather also. The total annual production of vegetable-tanned hides by all these organised tanneries is of the order of 18 lakh pieces while the number of chrome-tanned hides produced is of the order of 7 lakh pieces annually.

According to a recent estimate, the number of small-scale tanneries engaged in chrome tanning of hides is estimated to be 250. These are located in and around Calcutta. Although reliable and accurate statistics of production of chrome-tanned leather by these tanneries are not

*Source : Development Wing (Leather), Ministry of Commerce & Industry, Government of India.

available, the annual production of chrome-tanned leather by these tanneries is estimated to be about 1.0 to 1.5 million pieces.

The small-scale tanneries producing vegetable tanned leather are mostly situated in South India. They are about 500 in number. Accurate data of the number of vegetable tanned hides produced by them annually are not available. However, it has been estimated that they produce about 80 to 90 lakh pieces of vegetable-tanned hides every year. These are popularly known in the trade as 'East India Tanned Leather'.

Besides these three main types of tanneries, there are also a number of village tanneries scattered throughout the country. These do contribute to a great proportion of the country's production of tanned leather but as these are dispersed throughout the country, accurate figures of their annual production are not available. However, it is estimated that tanneries of this type are responsible for an annual output of about 80 to 90 lakh pieces of vegetable-tanned hides.

About 28 lakh pieces of hides are annually fully tanned and finished into leather. The quality of leather so obtained is suitable for making Western style boots and shoes, suit-cases, bags, etc., where a high standard of finish is required. Out of this estimated annual production, about 59 per cent was retained in the country for internal use while about 11.36 lakh pieces were exported during the year ending March, 1962. A list of the organised tanneries engaged in producing finished leather—both vegetable and chrome—can be seen at Appendix III.

As there is no export of hides in the raw state, there is no demand for hides for export in raw stage. There is demand for raw hides for use in raw condition in the making of straps, ropes, etc., for agricultural purposes. It is mostly the inferior and cheaper types of hides that are required for this purpose. However, raw cow hides and calf skins of good quality are in demand for the mounting of drums and other musical instruments. The total number of hides used for these purposes is estimated to be about 10.5 lakhs constituting five per cent of the production.

The industrial demand for raw hides can be summarised as under:

TABLE 27
Industrial demand for raw hides

Industry or Trade	Number in lakhs	Per- centage
Village artisans for making ropes, etc., without tanning	10.21	4.2
Village tanneries for indigenous tanning	94.80	39.0
Village and larger tanneries for making dressed hides	96.25	39.6
Small-scale tanneries engaged in producing chrome leather	14.34	5.9
Modern tanneries for making fully finished leather	27.47	11.3
Total (228.59 lakh pieces of Indian production plus 14.48 lakh pieces of raw hides imported)	243.07	100.0

It is seen that the greatest demand for raw hides is from the village tanneries and the larger tanneries engaged in the production of vegetable-tanned leather. While the tanneries producing East India tanned leather account for nearly 40 per cent of the raw hides, the village tanneries account for about 39 per cent. Modern organised tanneries accounted for about 11 per cent while the small-scale chrome tanners took nearly six per cent for chrome tanning. Only about 4 per cent of the total available raw hides found use in the raw state.

5.3. Quality of the Finished Material

The small village tanneries tan hides by crude indigenous methods. The material turned out is much inferior to that turned out by the East India tanneries or the organised tanneries. The tanning is done on a cottage industry scale handling only two or three hides at a time. This is mostly because the *chamars* are not in a position to invest the required amount of capital for big business. Whatever tanning materials may be available in the locality are used and generally no attempt is made to improve the quality of the leather that is produced. The tanning materials

comprise mainly barks of various shrubs and trees. The leather produced has an unpleasant smell which becomes more pronounced during rains. No finish or colour is imparted to the leather. Leather so produced is generally used for the making of country shoes, leather buckets for lifting water from wells and for such other goods where quality and finish are of no significance.

The work of the Khadi and Village Industries Commission towards improving the village leather industry needs special mention here. The All India Khadi and Village Industries Board which was constituted in 1953 prepared a number of schemes for the village leather industry and the main features of these schemes were as under:—

- (i) Setting up of flaying and carcass recovery centres ;
- (ii) Establishment of model village tanneries to improve the conditions of the village *chamars* and the quality of leather ;
- (iii) Tanning-cum-production centres for training in village tanning and carcass recovery work ; and
- (iv) Marketing Depots, Central and District, to provide marketing facilities.

Later, the Khadi and Village Industries Commission (formerly the All India Khadi and Village Industries Board) had made certain changes in the organisational and administrative set-up of the Leather Industry Section and concentrated mainly on the improvement of raw hides and skins and the dissemination of technical information to the field workers and provision of marketing facilities to the village producers. In short, they concentrate on promotion of efficient carcass recovery work in the rural areas. At the end of 1961-62, 243 flaying centres, 199 tanneries and 47 marketing depots were working under the control of the Commission. The carcass recovery-cum-tanning centres set up under the aegis of the Khadi and Village Industries Commission are classified under village tanneries in so far as this Report is concerned, though in such centres better techniques and methods are used in tanning than in the village tanneries.

The tanneries located in South India that are engaged in the production of East India tanned leather also use barks and tanning extracts of vegetable origin, but the

tanning is much superior to the ordinary village tanning and the material produced is soft and pliable with very little offensive smell. It is also of a lighter colour, compared with the crudely tanned hides produced in the villages. This industry is concentrated in the States of Madras, Andhra Pradesh and Mysore. Dressed hides are left unfinished and uncoloured by the tanners in the first instance. A large number of hides is handled by each unit though production is carried on mostly without the help of machinery.

Out of about 96 lakh pieces of tanned or dressed hides estimated to be produced annually, more than half is retained in the country for internal use and the rest exported. The quantity retained in the country for home consumption mostly finds use in the making of better types of country pattern shoes, insoles, etc., of Western style shoes, harness, saddlery and travel goods for local use. Tanned or dressed hides are liked by curriers in England not only for their light tannage but also because tannage can easily be 'stripped' and the 'stripped leather' can subsequently be tanned by them according to their requirements. This industry mostly requires kips. For this type of tanning, *awaram*, wattle, *babul*, *konnani* barks, wattle extract and myrobalans are used.

The small-scale tanneries producing chrome uppers are all located in and around Calcutta and constitute the largest consumers of raw hides for making chrome leather in the country. The leather produced by them is very often not of the standard of the chrome leather produced by the organised large-scale tanneries. As a consequence, their demand is mainly confined to cheaper raw hides of low selections with greater emphasis on cutting space than quality in chrome leather.

The large-scale modern tanneries engaged in the production of chrome tanned leather are about twelve in number. Approximately 7 lakh pieces (mostly kips and calves) are chrome-tanned annually by these tanneries. This is a chemical tannage, the main constituent being chrome salts. Several ready-made tanning compounds, which have simplified the chrome process considerably, are also being used. Some tanneries, however, prefer to make their own chrome liquor. This process of tanning requires a much closer control and greater technical skill than vegetable tanning.

5.4. Trend of Utilisation and Demand

Information regarding the year-to-year changes in the demand for raw hides by different industries is not available. However, the demand for raw hides by the tanning industries may be gauged to some extent by studying the figures of export of tanned or dressed hides and unwrought leather.

The following table gives the annual exports of tanned or dressed hides and unwrought leather from India during the 16 years ending March 1965.

TABLE 28

Exports of various types of hides from India

Year	Tanned or dressed hides		Unwrought leather	
	Quantity *(in lakh pieces)	Percentage increase(+) or decrease(-) over 1949-50	Quantity (in lakh pieces)†	Percentage increase(+) or decrease(-) over 1949-50
1949-50	50.13	..	2.19	..
1950-51	56.08	+11.9	1.19	-45.7
1951-52	53.58	+ 6.9	3.85	+75.8
1952-53	50.04	- 0.2	4.30	+96.3
1953-54	59.43	+18.6	3.49	+59.4
1954-55	46.26	- 6.7	3.62	+65.3
1955-56	44.92	-10.4	2.72	+24.2
1956-57	42.75	-14.7	8.02	+266.2
1957-58	35.12	-29.9	7.73	+253.0
1958-59	32.23	-35.7	6.62	+202.3
1959-60	45.72	- 8.8	13.54	+518.3
1960-61	36.36	-27.5	9.21	+320.5
1961-62	35.02	-30.1	9.03	+312.3
1962-63	33.73	-32.7	5.72	+161.2
1963-64	30.43	-39.3	8.32	+279.9
1964-65	29.34	-41.5	11.36	+418.7

*Conversion rate—1 kg.=.31495 piece.

† „ „ —1 kg.=.73487 „

It will be seen from the above table that, as compared to 1949-50, there has been an increase in the

export of tanned or dressed hides during the two subsequent years and during 1953-54 when the export was at its peak. There was a decline from 1954-55, the year 1964-65 recording the lowest exports.

As regards exports of unwrought leather during the same 16-year period, though there was a decline in 1950-51 as compared to 1949-50, the exports in subsequent years have recorded a rise. The exports of unwrought leather had touched the peak during 1959-60 when they were more than six times that of 1949-50.

The imports of tanning materials for manufacturing tanned or dressed hides during the five years ending 1964-65 are given in the following table:

TABLE 29
Imports of certain tanning materials in India

Year	Tanning bark (wattle or mimosa)		Other tanning substances		Tanning extracts except synthetic tanning materials	
	Quantity (metric tonnes)	Value (million rupees)	Quantity (metric tonnes)	Value (million rupees)	Quantity (metric tonnes)	Value (million rupees)
1960-61	8,607.1	3.70	317.8	0.34	12,025.2	9.38
1961-62	7,140.5	2.90	292.9	0.41	14,897.3	11.10
1962-63	7,019.2	3.05	143.8	0.32	17,494.6	14.40
1963-64	5,652.2	2.51	68.6	0.15	16,731.6	13.91
1964-65	6,250.9	3.00	63.6	0.10	27,515.5	24.75

Taken as a whole, the imports of the three different categories of tanning materials have been the highest during 1964-65. Imports during 1960-61 were the lowest during these years.

5.5. Seasonal Variations in Demand

Reliable data on the seasonal variations in demand for different varieties of raw hides are not available. With the progressive ban on cattle slaughter, the tanning industry now has to depend mostly on fallen hides. Since quality

material is becoming more and more scarce day by day, there is actually greater demand for all available hides. As mortality amongst livestock is a natural phenomenon, the production does not usually follow any set pattern and as the tanning industry is facing a shortage of quality hides, there is always a demand for hides and no definite trend can be established in respect of demand.

5.6. Utilisation of By-products

In the advanced Western countries of the world, great strides have been made in conserving and utilising the by-products of the hide and tanning industry. In India, however, little attention was paid to this aspect until the pre-war days. During the war period, when imports became difficult and demand for glue, gelatine, etc., increased to a very great extent, sincere attempts were made to manufacture some of the by-products, specially glue, at various places. At present there are nine factories in the organised sector that are engaged in the manufacture of glue from hide trimmings. Names and locations of these factories are given in Appendix IV. Edible gelatine—another by-product from hide cuttings—is not made successfully in India. A factory for making gelatine in India has recently been established in Madhya Pradesh. The Central Leather Research Institute at Madras—opened in January 1953—is engaged in helping the Indian leather industry through fundamental and applied research. *Inter alia*, the institute is also evolving techniques for the better utilisation of the by-products of the hide and tanning industry. Recently great strides have been made in improving utilisation of all the by-products as is evident from the fact that factories in the private sector have sprung up for the manufacture of useful articles from the by-products. A factory on modern lines has recently been inaugurated in Madras for the manufacture of leather boards.

Two flaying centres have been set up under the aegis of the Food and Agriculture Organization of the United Nations—one at Bakshi-ka-Talab (U.P.) and the other at Vijayawada (A.P.). There is also a College of Leather Technology functioning in Calcutta, which offers a degree course in leather technology. A Central Footwear Training Centre also functions at Madras.

6. PRICES

Besides the conditions of supply and demand, the prices of hides depend upon a variety of factors like the type, quality, size, weight, cure, season of production, place of origin, conditions prevailing in overseas markets, and so on. A comprehensive study of the price data is, therefore, rendered difficult. Moreover, in the primary stages of the trade, there are no price records maintained by the traders as they are illiterate. Even in the later stages of the trade published data on prices are either incomplete or absent. In the case of fallen hides, it is only the hide that represents almost the entire cash value recoverable from a carcass. The care and attention which the *chamars* usually pay in the flaying or preparation of the hide, depend greatly on the price they are likely to realise.

There being no statutory grades in the hide trade, the comparison of prices between different markets is also not practicable and whatever data are available cannot thus be fully utilised. In this chapter, attempts have been made to review the matter as fully as possible, but the figures given should be taken to be applicable to average qualities and market conditions only.

6.1. Unit of Sale and Basis of Price Quotations

(1) *At preliminary stages.*—During the early stages of hide marketing the quality or grade generally has no bearing on the basis of price quotation. The price offered is usually a flat one on per piece or per lot basis. Similarly, no consideration is generally shown to the weight of the individual pieces.

(2) *At assembling markets.*—However, during the later stages of hide marketing, i.e., at the assembling markets, certain conventions are observed in fixing the units of sale and the basis of price quotations. But these vary from tract to tract, market to market, and, at times, between merchants in the same market. Sometimes, when a certain system of quotation has been in vogue for a length of time, it is changed only according to the market requirements. For instance, prior to 1938, in the Kanpur market, wet-salted kips were quoted on the basis of pounds per

rupee, but since then they are being sold on the score basis. Certain weight limits are, however, prescribed for a pack of twenty hides. The units of sale and the basis of price quotations according to types and cures in some of the important assembling markets are given in the following table:

TABLE 30

Basis of price quotations at the important assembling markets

State	Dry, Dry-salted	Wet-salted
West Bengal	Per 45 kg.	Per 45 kg.
Delhi	Per quintal	Per piece
Punjab	Per quintal	Per quintal
Madras	Per kg.	Per kg.
Maharashtra	Per kg., per quintal	Per kg.
Orissa	Per kg.	Per kg.
Uttar Pradesh	Per score, per 19.5 kg.	Per score, per 19.5 kg.

It is seen from the table that in quoting prices, the trade does not follow a uniform method, not even for a particular type of cure. For instance, in some areas, the wet-salted hides are quoted per piece or per score but, in certain other areas, the price is quoted in rupees per kg. or per quintal. In certain areas the quotation is per piece. These diversities are not helpful and this aspect, therefore, needs standardisation.

As the outturn of leather is proportionate to the hide substance present in a pelt, in most countries, hides are quoted and sold on the basis of weight. In doing so, however, the origin of the hide, the type of cure, the quality of the hide and the weight range of an individual piece

are also taken into account. For instance, in Great Britain, the quotation 'pence per pound' is based on (a) first or second class, (b) clear or warbled, (c) Manchester ox or cow, and (d) for weight groups ranging from 31.8/35.8 kg. (70/79 lb.), 27.2/31.3 kg. (60/69 lb.) and 22.7/26.8 (50/59 lb.) per hide. In other words, the buyer knows whether he is purchasing primes or seconds, heavies or lights even though the price is based on the weight of the hide.

On account of adulteration or loading of hides with extra quantities of salt, mud, sand or of insufficient trimming, practices which are not uncommon in India, there is always a danger in purchasing on the basis of weight. But these defects could be considerably prevented by specifying, in the schedule, the particulars of cure, etc., so that "loaded" hides may not be over-valued.

It is, therefore, recommended that the various associations of tanners and shippers should take steps to introduce the system of quoting the price of hides (irrespective of cures) on the basis of a standard weight for each grade and weight group. This would render the comparison of prices in different markets easier and a system of price intelligence could be built up to the advantage of the hide trade.

6.2. Factors affecting the Price of Hides

Kips and buff hides have distinct uses and one cannot be substituted for the other; nor can there be any mistake about their identity. Consequently, there are two independent series of prices, with marked differences. Usually the price of one type does not show sympathetic rise or fall on account of variations in the price of the other. There are, however, several common factors which influence their prices in general. Apart from the usual influences of supply and demand in Indian or foreign markets, the special factors which affect their prices are: (i) whether fallen or slaughtered, (ii) type of cure, (iii) weight of the pelt, (iv) distinction due to sex, (v) quality or number of defects, (vi) district of origin, and (vii) effects on quality due to seasons. These are discussed below:

(i) *Fallen or slaughtered type.*—Hides removed from dead animals are generally of a poorer quality than those of slaughtered animals. This factor has, therefore, a considerable influence on the price, even though the cure of the

two types may be the same. The figures in the following table explain the position:

TABLE 31

Comparison of prices of fallen and slaughtered hides at Bombay (1964-65)

(In rupees per kilogram)

	Fallen type	Slaugh- tered type	Percentage premium over fallen type
	Rs. P.	Rs. P.	Rs. P
Cow hides, raw salted	1.14	1.24	+8.8
Buff hides, wet-salted	1.15	1.27	+10.4
Average	1.15	1.26	+9.6

It is seen from the above that the price of slaughtered hides is definitely more than that of fallen hides, the percentage difference ranging from 8.8 to 10.4.

(ii) *Type of cure*.—The preceding table explains, to an extent, the variation in the price of differently cured hides but, for the purpose of comparison, the calculations have to be based on 'a pound of hide-substance'. The average dry matter and moisture in raw and differently cured kips may be taken as under:

TABLE 32

Proportion of hide-matter, moisture and salt in a pound of raw and differently cured kips

(In buncds)

Constituents	Raw green	Wet- salted	Dry- salted	Sukti
Dry hide matter	6½	9	11	14
Moisture and salt	9½*	7	5	2*

*No salt in these.

It is seen from the above table that the proportion of moisture depends on the type of cure. Apart from loss of weight, the cost of salt utilised and labour charges incurred influence the price per maund.

As the outturn of leather is proportionate to the hide-substance in the hide, the type of cure has a great bearing on price. Raw green hide is a perishable product and starts deteriorating within a few hours after flaying. Hides cured by the wet-salted process last longer than green hides. The life of dry-salted hides is longer than that of wet-salted ones. The price of one pound of hide substance of *sukti* hides, which may last longer than even dry-salted hides if properly arsenicated, is, however, the lowest because, as stated in the previous chapter, hides cured by this process are generally from dead animals and consequently are of a quality inferior to that of the other types.

(iii) *Weight of pelt.*—The weight is dependent on the size and thickness of the pelt. Both these factors are influenced by age, breed and physical condition of the animal at the time of death or slaughter. It is observed that in India, raw green kips vary in weight from 4.5 kg. to 22.7 kg. (10 to 50 lb.) per piece and raw green buff hides from 11.3 kg. to 54.4 kg. (25 to 120 lb.). In extreme cases, they may even weigh more. Further, the various uses to which the hide or the leather made from it can be put depend, to some extent, on the thickness or weight per square foot of the hide in its raw condition. In order to regulate the purchases according to the requirements of the buyers and the trade at large, hides are classified into different weight groups—generally three, viz., Heavy, Medium and Light. Irrespective of other factors, prices differ according to the above weight groups.

The influence of weight on the prices of kips and buff hides is, however, quite the opposite. With the former, the light kips are more expensive as they fetch better returns when disposed of as leather, which is sold on a measurement (per square foot) basis. On the other hand the best price per maund is received, not for the lightest but for the heaviest buff hides. The heavier buffalo hides can produce stouter and heavier leather, which is sold on a weight (per lb.) basis and is capable of being split into layers.

(iv) *Distinction due to sex.*—Normally, the hides of females are lighter than those of males and have finer and more compact grain. The hides of uncastrated males, although heavier, are inclined to be spready and spongy. For these reasons the hides of bulls are not preferred by tanners and some do not accept them at all or buy them only at a lower price. It is, however, found that the castration of the male at a young age changes the character of the

hide so as to resemble that of the female. Thus, in India, where most of the male calves are castrated for turning them into draught bullocks, hides of the young bullocks and those of the cows do not show much difference in quality, utility or price. The yoke-mark on the neck portion of the bullock hide, however, reduces its value to some extent.

(v) *Quality of the hide.*—Of all the factors, the consideration of quality or the presence or absence of defects in the hide is of the greatest importance in fixing the price. This subject has, however, been discussed in detail in the chapter on "Quality and Grading of Hides" and here the matter is discussed only briefly.

The best hide is the one obtained from the young (but not too immature), healthy, well cared for animal, without having any mechanical defects (*e.g.*, scars, cuts, bruises, etc.) either on the flesh or on the hair side of the pelt. Proper and timely curing of the hide is equally important for preserving its quality and if this is not done carefully, the hide loses its value. All factors which determine the ultimate value of leather produced from the hides have a bearing on prices. In order to assess the value correctly, it is necessary to classify or sort hides into different grades according to the number and type of defects each hide possesses. In most of the assembling and distributing markets in India, hides are not classified into different grades before sale but are disposed of in mixed lots. The prices offered for raw green kips graded at the four experimental hide grading stations (in 1940) according to the Agmark specifications shown in the table below will indicate the price difference according to quality.

TABLE 33
Price of wet-salted kips on the basis of Agmark Grades (1940)

Grading station	Per score			
	A	B	C	Rejection
	Rs.	Rs.	Rs.	Rs.
Delhi	165	155	140	78
Agra	155	135	106	53
Bareilly	130	107	90	62
Rampur	145	126	107	75
Average of 4 markets	149	131	111	67
Price per hide	7.7	6.9	5.9	3.6

The figures represent the average price for Heavy, Medium and Light hides and could be interpreted in many ways. But they clearly show the wide difference that exists in the price of lower and top quality hides. This shows how important it is, both from the buyers' and the sellers' points of view, to properly grade and mark the hides before sale.

(vi) *District of origin.*—In a large country like India, the size and type of cattle and the conditions under which they live and grow differ considerably from tract to tract. The large cows and buffaloes of the North and the West are very different from their stunted cousins of the East and South. The cattle in the central parts of India are again different. Accordingly, hides produced in the different parts are of dissimilar qualities and command different prices. The size of the animal reflects upon the shape, dimensions or the 'pattern' of the hide obtained from it and this is yet another reason why prices vary according to areas.

TABLE 34

Prices of dry-salted and wet-salted kips at certain markets (1964-65)

		(Rs. per quintal)	
Wet-salted		Dry-salted	
Market	Price	Market	Price
Cuttack	125.00	Delhi	289.00
Calcutta	240.38	Nagpur	538.40
Bombay (Halali)	124.33		
Bombay (Murdari)	113.92		

The prices relate to wet-salted and dry-salted kips as available in different parts of the country. The hides available in different markets are altogether different in quality and so the prices in two different markets are not comparable. The figures merely show that due to factors described earlier in this section, hide prices are not the same in different parts of the country.

(vii) *Influence of seasons.*—In a country like India where the majority of cattle are dependent on grazing rather than stall feeding, the availability of pastures also has some bearing on the quality of the hides produced in different seasons and, consequently, on their prices. The monthly variation in prices, due to other factors, are described in a latter section, but here only the broad influence of “seasons” on the prices of hides is dealt with.

When feed is fairly well available and the weather not too severe, the condition of the animal and, with that, the quality and thickness of the hide-substance improve. Generally, better quality hides are produced during October to March whereas during the warmer part of the year the quality is not so good.

TABLE 35
Effect of seasons on prices (1964-65)

Name of the market	Variety	(Rs. per quintal)		
		Summer	Winter	Percentage of difference over summer
Nagpur	Cow hide, dry	534.92	541.89	+1.3
Nagpur	Buff hide, dry	524.92	533.69	+1.7
Cuttack	Cow hide, wet-salted	124.00	125.00	+0.8
Cuttack	Buff hide, wet-salted	71.00	73.00	+2.8
Calcutta	Cow hide, wet-salted	225.36	255.39	+13.3
Kanpur	Buff hide, wet-salted	161.86	170.30	+5.2

The above is true only generally as there may be special causes, for example, control, war demand, etc., which may upset the above tendency in certain markets or in parts of the country.

6.3. Seasonal Variations in Prices

Partly due to increased demand from tanners and partly as a result of the natural improvement in the quality of the pelt during winter months, hide prices generally rule

higher from November to February than during the other months. The fluctuations in demand may be gauged from the variations in monthly arrivals of hides at important markets given earlier.

(i) Kips.—Monthly prices of differently cured kips at some important markets are given in the table below, and in the graph facing this page.

TABLE 36
Monthly variation in the prices of kips (1964-65)

(In rupees per quintal)

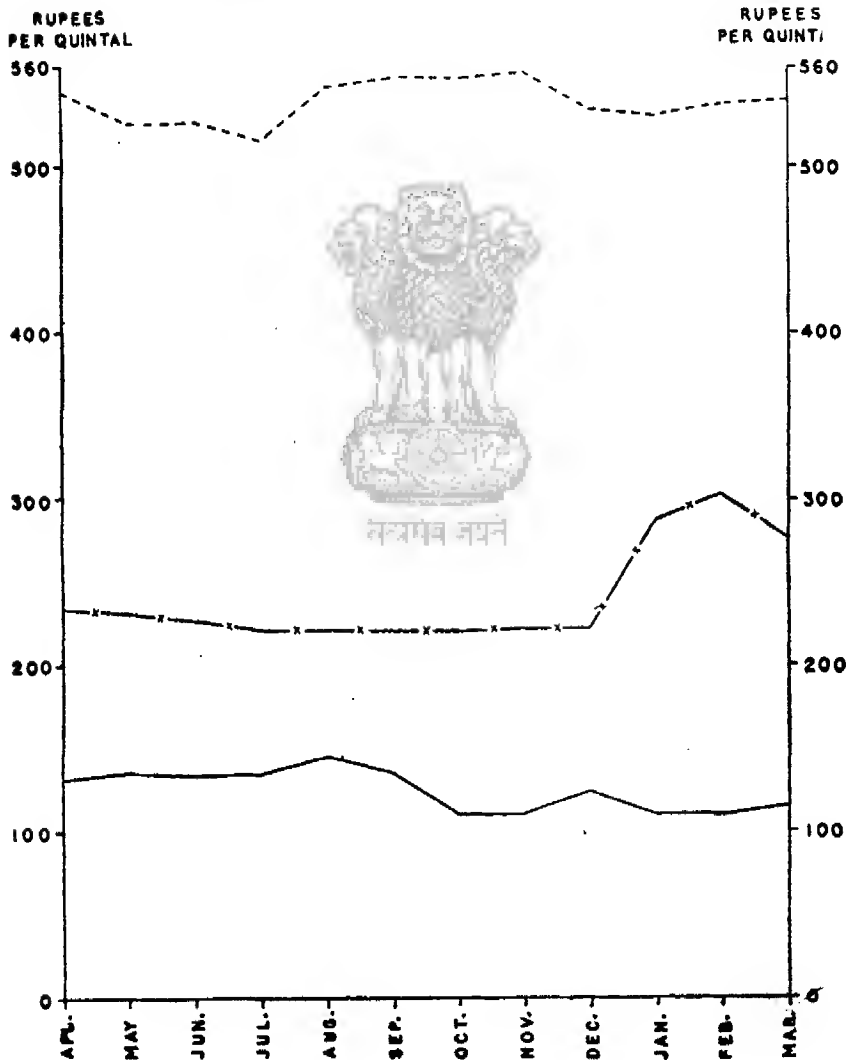
Month	Bombay raw salted (Halali)	Calcutta wet- salted	Nagpur ordinary dry	Average of three types	Monthly indices based on annual averages
April . . .	132.00	233.33	543.75	303.03	100.7
May . . .	135.00	231.48	525.00	297.16	98.7
June . . .	133.00	225.98	525.00	294.66	97.9
July . . .	134.00	220.46	515.00	289.82	96.3
August . . .	145.00	220.46	547.00	304.15	101.0
September . . .	135.00	220.46	553.75	303.07	100.7
October . . .	110.00	220.46	553.40	294.62	97.9
November . . .	110.00	222.22	556.66	296.29	98.4
December . . .	123.00	222.22	533.75	292.99	97.3
January . . .	110.00	286.87	530.00	308.96	102.6
February . . .	110.00	302.78	537.50	316.76	105.2
March . . .	115.00	277.78	540.00	310.93	103.3
Annual average . . .	124.33	240.38	538.40	301.04	100.0

It will be observed from the graph that in the case of raw salted hides the prices were the highest during August, May and September and were lowest during October, November, January and February. In the case of wet-salted hides, the prices were lowest during July to October and were the highest during February and January. The prices were the lowest during July and were the highest during November in the case of ordinary dry hides.

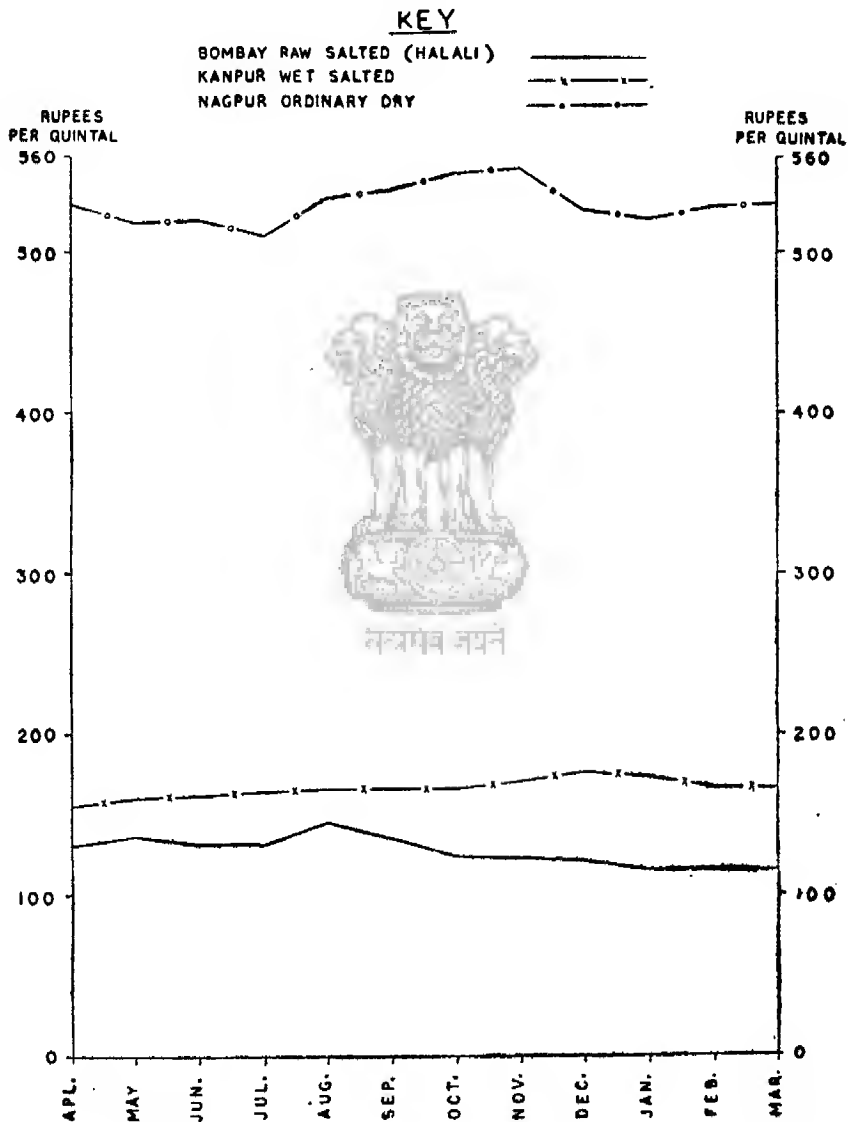
MONTHLY VARIATION IN THE PRICES OF KIPS (1964-65)

KEY

BOMBAY RAW SALTED (HALALI) —————
CALCUTTA WET SALTED —x—x—x—
NAGPUR ORDINARY DRY - - - - -



MONTHLY VARIATION IN THE PRICES OF BUFFALO HIDES (1964 - 65)



(ii) *Buff hides.*—The monthly prices of buffalo hides at certain markets in India during the year 1964-65 are given in the table below and graphically represented in the diagram facing this page.

TABLE 37

Monthly variation in the prices of buffalo hides (1964-65)

(In rupees per quintal)

Month	Bombay raw salted (<i>Halali</i>)	Kanpur wet- salted	Nagpur ordinary dry	Average of three types	Monthly indices based on annual averages
April . . .	130.00	153.85	528.75	270.87	98.8
May . . .	137.00	158.97	518.00	271.32	99.0
June . . .	132.00	160.92	520.00	270.97	98.9
July . . .	131.00	164.10	510.00	268.37	97.9
August . . .	145.00	166.67	534.00	281.89	102.8
September . .	135.00	166.67	538.00	280.14	102.2
October . . .	124.00	166.67	548.00	279.56	102.0
November . . .	123.00	170.51	551.66	281.72	102.8
December . . .	121.00	176.92	525.00	274.31	100.1
January . . .	115.00	174.36	520.00	269.79	98.4
February . . .	115.00	166.67	527.50	269.72	98.4
March . . .	115.00	166.67	530.00	270.56	98.7
Annual average .	126.92	166.08	529.31	274.10	100.0

In the case of raw salted buffalo hides, the lowest price is reached in January to March while the peak is during August and May. In the case of wet-salted buff hides (in 1964-65) the prices were the highest during December and the lowest during April. In the case of ordinary dry buff hides there is a fall in July. There is a rise in August and the prices reach the peak during November.

Monthly variations in prices of raw hides do not, as a rule, rigidly follow any particular trend in all markets due to certain special circumstances like fall in prices of tanned hides in foreign markets, strikes in tanneries, etc. The following table gives an example of how the monthly variation in prices do not rigidly follow any particular trend

TABLE 38

Seasonal variation in the prices of wet-salted hides (1964-65)
(In rupees per kg.)

Variety	April	May	June	July	Aug.	Sept.
<i>Cuttack—</i>						
Kips . . .	1.25	1.22	1.23	1.25	1.25	1.25
Buff hides . . .	0.69	0.69	0.70	0.72	0.72	0.72
<i>Calcutta—</i>						
Kips . . .	2.33	2.31	2.26	2.20	2.20	2.20
Buff hides . . .	1.44	1.43	1.43	1.43	1.43	1.43

(In rupees per kg.)						
Variety	Oct.	Nov.	Dec.	Jan.	Feb.	March
<i>Cuttack—</i>						
Kips . . .	1.25	1.25	1.25	1.25	1.25	1.25
Buff hides . . .	0.72	0.72	0.74	0.73	0.73	0.73
<i>Calcutta—</i>						
Kips . . .	2.20	2.22	2.22	2.87	3.03	2.78
Buff hides . . .	1.43	1.28	1.31	1.44	1.44	1.44

Monthly variation in prices of raw hides at Calcutta and Bombay for the three years ending 1964-65 are given in Appendix V.

6.4. Prices in relation to Quality

Of all the factors, the intrinsic quality of the pelt has the greatest influence on its price. As there is no common system of classification among various types of tanners and as quality hides are becoming scarce, no accurate record of prices are available based on quality factors. The study of prices in relation to quality is thus rendered difficult.

Generally speaking, the position of the buyer is always more privileged than that of the seller. But it must be stated that, to a great extent, the insistence on the part of the buyers on examining the hides at their godowns is due to the disorganised state of hide marketing and so the fact that buyers cannot place any reliance on the sorting or grading done by the sellers. Once the latter organise

themselves and adopt a uniform system of grading and marking the hide according to predetermined specifications, there should be no difficulty in insisting on the buyers to purchase their requirements from the open market.

With a view to finding out the possibility of introducing quality classifications of raw hides on some specific standards in the hide trade, the Agricultural Marketing Adviser to the Government of India established in 1936-37 a few experimental hide grading stations under the Agricultural Produce (Grading and Marking) Act, 1937, at some important slaughter houses in India. Records of the approximate prices of different grades of AGMARK hides were maintained in all the above stations. As the quantity of hides sold on the grades was not appreciable, the figures quoted below merely indicate price variations between the grades during that particular period.

TABLE 39
Prices of raw green kips according to AGMARK grades
(Per score)

Grading station (1)	A		B	
	From	To	From	To
	(2)	(3)	(4)	(5)
	Rs. As.	Rs. As.	Rs. As.	Rs. As.
Delhi	122-8	181-4	105-0	145-0
Agra	118-12	152-8	98-12	122-8
Rampur	107-8	141-4	91-4	122-8
Bareilly	126-4	132-8	102-8	107-8
Garden Reach (Calcutta). .	62-8	82-8	51-4	67-8

(Per score)

Grading station	C		Rejections*	
	From	To	From	To
	(6)	(7)	(8)	(9)
	Rs. As.	Rs. As.	Rs. As.	Rs. As.
Delhi	78-12	115-0	52-8	75-0
Agra	70-0	93-12	32-8	45-0
Rampur	77-8	101-4	56-4	78-12
Bareilly	85-0	92-8	51-4	56-4
Garden Reach (Calcutta) .	36-4	52-8	21-4	30-0

*This is not a statutory grade designation under the Hide Grading Rules but in order to show that the hides which do not fall under 'A', 'B' or 'C' grades have also been inspected, are called "Rejections".

TABLE No. 40
Prices of raw green buff hides according to AGMARK grades

Grading station (1)	(Per maund)			
	A		B	
	From	To	From	To
	(2)	(3)	(4)	(5)
	Rs. As.	Rs. As.	Rs. As.	Rs. As.
Karachi	18-8	19-3	13-12	14-7
Delhi	20-4	22-7	17-3	19-6
Agra	16-12	18-15	14-4	15-3
Bareilly	24-4	24-14	17-4	18-2
Garden Reach (Calcutta). . .	12-9	14-9	12-6	15-10

Grading station	(Per maund)			
	C		Rejections	
	From	To	From	To
	(6)	(7)	(8)	(9)
	Rs. As.	Rs. As.	Rs. As.	Rs. As.
Karachi	10-4	10-15	8-1	8-10
Delhi	14-5	15-12	10-12	12-1
Agra	12-2	13-5	9-5	10-13
Bareilly	11-3	11-14	9-2	9-10
Garden Reach (Calcutta) . . .	8-13	10-6	6-0	6-12

Source : Second edition of the Report on the Marketing of Hides, pp. 102-103.

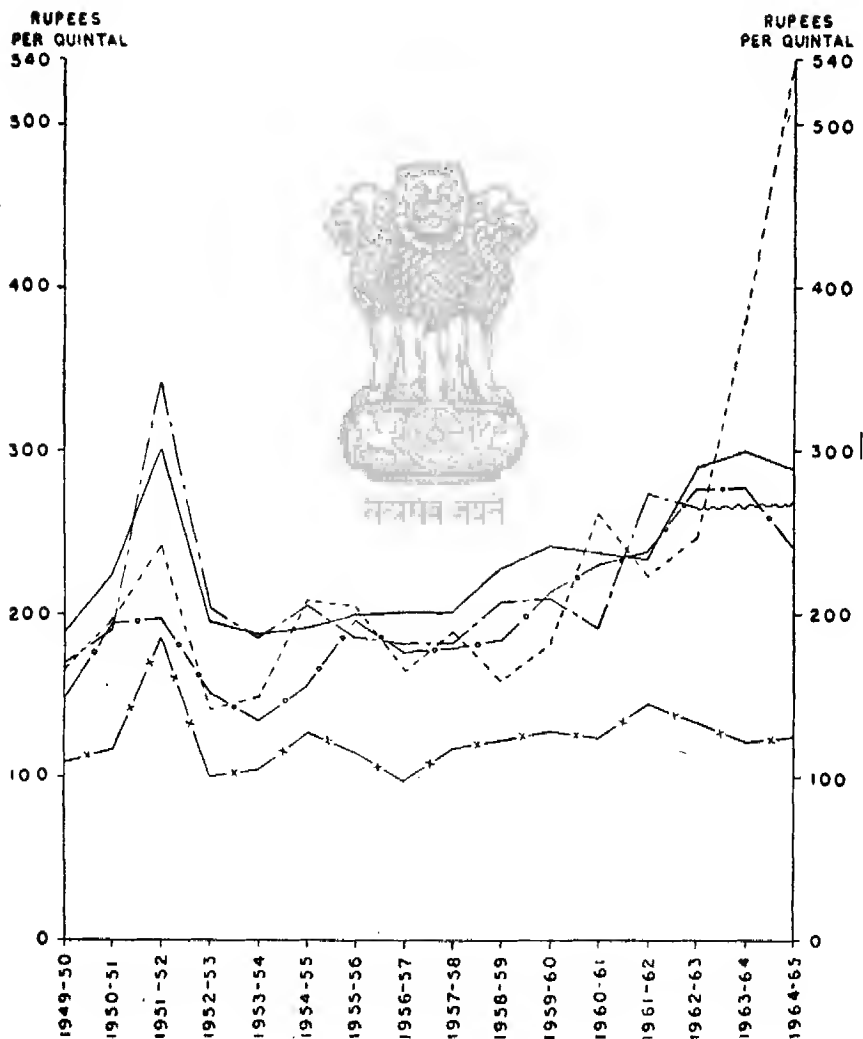
In the above tables, under each grade a range of prices is given. This covers the differential prices for Heavy, Medium, and Light hides. Differences in price under the same grade also will be noticed at the various grading stations. This is due to regional variations in the quality. All the prices are, however, for raw green fresh slaughtered hides.

For the manufacture of leather goods for army use, the Government Harness and Saddlery Factory, Kanpur, purchases about 100 raw hides per day. It requires what may be called the "pick" of hides available in the upcountry markets. Besides, its specifications are very

AVERAGE ANNUAL PRICES OF KIPS

KEY

WET SALTED	[	CALCUTTA	—•—•—
		CUTTACK	—x—x—
DRY SALTED	[	CUTTACK	- - - - -
DRY	[	DELHI	—————
		NAGPUR	- - - - -



strict. Hides not coming up to its standard are returned to the suppliers and, at times, the rejections are as high as 60 to 80 per cent.

Under the circumstances, it is obvious that the price paid by the factory should be above that of the ordinary run of the market prices. It is observed that the factory has to pay for the acceptable hides approximately 25 to 40 per cent above the usual price of 'Primes' or 'A' grade hides.

6.5. Trend of Prices

Want of adequate, accurate and comparable price data at all important markets has rendered a comprehensive study of the trend of prices difficult.

However, the average annual prices of kips in certain important markets for the sixteen-year period ending 1964-65 are given in the following table and graphically represented in the diagram facing page 56.

TABLE 40
Average annual prices of kips
(In rupees per quintal)

	Wet-salted		Dry-salted	Dry	
	Calcutta	Cuttack	Cuttack	Delhi	Nagpur
1949-50 . . .	148.03	108.03	169.76	187.79	165.15
1950-51 . . .	194.14	116.84	189.61	223.72	195.96
1951-52 . . .	197.33	185.19	341.71	301.41	241.13
1952-53 . . .	151.46	99.21	202.82	195.58	141.46
1953-54 . . .	133.85	103.61	185.19	187.55	148.70
1954-55 . . .	155.26	125.66	205.04	191.56	207.64
1955-56 . . .	195.66	114.64	185.19	199.15	204.96
1956-57 . . .	176.37	97.01	180.77	200.94	165.68
1957-58 . . .	178.17	116.84	180.77	200.94	187.55
1958-59 . . .	183.85	121.26	207.24	229.02	158.69
1959-60 . . .	213.80	127.88	209.44	242.47	181.12
1960-61 . . .	229.51	123.46	191.80	238.34	260.96
1961-62 . . .	237.93	145.17	273.42	234.52	224.39
1962-63 . . .	275.91	134.58	265.42	289.17	245.39
1963-64 . . .	277.18	120.25	N.A.	300.00	378.40
1964-65 . . .	240.38	125.00	N.A.	289.00	538.40

It will be seen that the prices in the case of all types reached the peak in 1951-52 except in the case of wet-salted kips at Calcutta and dry kips at Nagpur which touched the peak in 1963-64 and 1964-65 respectively. It will also be observed that the general trend of all types has more or less remained the same except for slight variations.

The average annual prices of buffalo hides at certain important markets are given in the table below and graphically represented in the diagram facing this page.

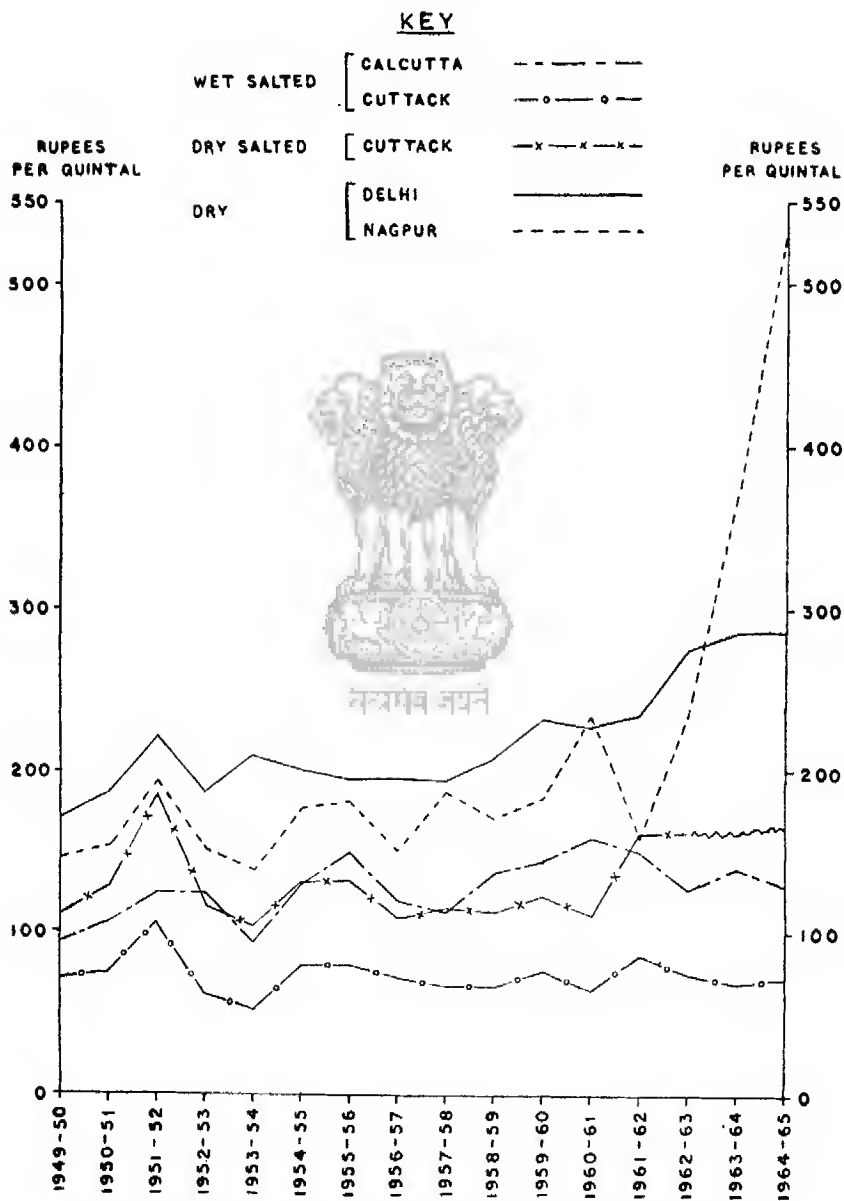
TABLE 41
Average annual prices of buffalo hides

(In rupees per quintal)

Year	Wet-salted		Dry-salted	Dry	
	Calcutta	Cuttack	Cuttack	Delhi	Nagpur
1949-50 . . .	93.10	70.54	110.22	171.84	146.50
1950-51 . . .	106.23	74.96	127.88	186.21	152.96
1951-52 . . .	124.61	105.83	185.19	221.04	192.90
1952-53 . . .	124.02	61.73	116.84	186.21	152.72
1953-54 . . .	93.56	52.91	103.61	208.98	137.98
1954-55 . . .	129.35	79.36	130.08	199.55	176.83
1955-56 . . .	148.80	79.36	132.27	194.24	180.85
1956-57 . . .	119.87	72.74	108.03	194.40	150.89
1957-58 . . .	112.77	66.15	114.64	194.24	187.55
1958-59 . . .	137.15	66.15	112.45	208.20	170.13
1959-60 . . .	143.31	74.94	121.26	232.21	183.29
1960-61 . . .	158.40	63.93	110.23	227.47	234.35
1961-62 . . .	150.01	85.00	160.50	234.41	158.58
1962-63 . . .	126.01	74.25	161.83	274.80	233.91
1963-64 . . .	139.99	67.83	N.A.	285.00	371.21
1964-65 . . .	129.43	72.00	N.A.	285.36	529.31

It will be observed that the prices in respect of all the three types rose gradually till 1951-52 and recorded a decline thereafter. The prices again recorded a rise from 1954-55 except in the case of dry hides at Delhi. But for slight variations, the trend has more or less remained uniform in the case of all types except dry hides at Delhi and Nagpur.

AVERAGE ANNUAL PRICES OF BUFFALO HIDES



6.6. Note on Price Intelligence Service

Modern trade conditions require that producers, dealers and manufacturers should be well aware of reliable information on stocks, arrivals and prices of a commodity at important markets. If the trade in the commodity is of internal significance, foreign market conditions should also be periodically reviewed. Unfortunately in the case of the Indian hide trade, a proper price and market intelligence service has yet to be developed. Its absence is, however, felt by the trade and in order to fill in the gap to some extent, all important buyers and sellers keep in touch with other markets, as a part of their office routine. A private service has, however, its limitations and often there is no check on the accuracy of the information received or sent out. Cases of receipt of bogus information on prices or market tendencies are not uncommon and producers and small merchants stand to suffer.

Some information on hide prices and/or arrivals at some markets appears periodically in the press and in some State publications. As far as is known, the following journals, publications and dailies publish such information:

1. "Weekly Bulletin of Wholesale Prices in Punjab" issued by the Economic & Statistical Organisation, Government of Punjab, Chandigarh—Weekly.
2. "Bulletin of Agricultural Prices" issued by the Economic & Statistical Adviser to the Government of India, New Delhi—Weekly.
3. "The Fort St. George Gazette" Madras—Weekly.
4. "Month-end Price Bulletin" issued by the Deputy Director of Agricultural Marketing, Bihar, Patna—Monthly.
5. "Price Bulletin", Calcutta, issued by the Government of West Bengal, Directorate of Agriculture (Marketing Branch), Calcutta—Monthly.
6. "The Indian Trade Journal" issued by the Director General, Commercial Intelligence & Statistics, Calcutta—Weekly.

7. "The Tanner"—Monthly.
8. "The Hindu"—Daily.
9. "The Indian Express"—Daily.

The daily papers deal with the subject not daily but generally once a week and that also not with any regularity. The method of publication also differs from journal to journal.

The existing arrangements for the dissemination of prices and market intelligence to the members of the trade cannot be said to be complete and thus leave much scope for improvement. The establishment of a proper price intelligence service is of immediate necessity.

Considerable service would be rendered to the trade if daily prices for all the important types of hides, according to grades and weights at the important hide markets, are collected and issued to the Press in the form of a bulletin. The bulletin should also include information on arrivals at the markets and the tendencies at each market. The London market fluctuations in the price of "East India tanned kips" should also be taken into account, as they affect the prices of raw hides in India. The collection of information, its scrutiny and dissemination can best be done by a central organisation, such as the Tanners' Federation of India at Kanpur, in collaboration with the Shippers' Associations at Calcutta. The proposal is commended to the above trade bodies for their consideration. They should also endeavour to see that the current information is passed on to the smaller assembling markets so that producers may benefit by the improvement in prices, if and when it occurs. The Zilla Parishads and others who manage and control the periodical markets should arrange to obtain this information and display and disseminate, for the guidance of the sellers, such portions from it as the State Marketing Officer may advise. The selected information might be put up on notice boards, black-boards or announced by beat of drums.

7. PREPARATION FOR THE MARKET

The hide—whether from dead or slaughtered animals—is a highly perishable product and starts decaying within a few hours of the animal's death. The most ideal thing for a tanner would be to receive freshly slaughtered hides which have not been subjected to any preservation or cure. But such a procedure not being possible save in exceptional cases like the indigenous village tanners who handle only one or two hides at a time, all hides have to be suitably preserved as they take considerable time in reaching the tanner. Proper preparation of hides for the market is, therefore, of paramount importance and the processes involved in the preparation are as under:

7.1. Flaying

Flaying is the first of the processes involved in the preparation of hides for the market. Flaying is the removal of the hide from the dead or slaughtered animal. Besides this, it also includes trimming the hide to the proper shape, dressing of the extra flesh and fat and rendering the hide free from foreign matter prior to drying or salting. Flaying needs much care in the absence of which the value and utility of an otherwise good hide would be reduced considerably. Although flaying by machine has recently been introduced as a measure of improvement in certain European countries, this operation continues to be a manual one in India.

Defective flaying may result in knife cuts and gougings which may sometimes be very deep so as to make holes which cannot be concealed in the finished hide. Consequently the value of the finished hide is reduced. Leather made from such hides cannot be used in the manufacture of leather belting, upholstery, etc., and has to be utilised in the manufacture of smaller articles such as boots, shoes, etc. Since the value of the leather is directly proportional to the value of this finished product the manufacturer of leather goods pays a lesser price for such damaged hides. As the cost of tanning is the same for hides whether they are properly flayed or not, the tanner cannot afford to pay the same price for a badly flayed hide as he would for a well flayed one. Where the system of buying raw hides

on a flat basis without proper sorting is prevalent, the buyer generally makes very liberal allowances for the proportion of badly flayed hides in quoting the prices with the result that even the better flayed ones fail to fetch their due.

Ignorance on the part of flayers of the extent of losses caused by bad flaying contributes to some degree towards bad flaying. The practice of selling the hide on the body of the animal also is responsible for killing the incentive for careful flaying, as the hide then becomes someone else's property and it hardly matters how the flaying is done. The other factors responsible for defective flaying of hides in India are general carelessness on the part of the flayers, lack of supervision over them, engagement of inexperienced flayers, use of unsuitable knives, inadequacy of space, lack of or inadequate arrangements for hoisting carcasses, poor lighting (flaying normally takes place during dark hours), payment of flaying charges on a contract or piece wage basis, scraping off a part of the hide itself to give a neat and trimmed appearance to the meat at the expense of the hide, leaving of superfluous flesh on the dead hide to increase its weight, etc.

Although it has been realised that improper flaying causes considerable economic losses, no estimates are available to show the exact loss to the country on this score. However, under the experimental AGMARK Hide Grading Scheme in 1937-38, records were maintained of hides put in a lower grade as a result of flay marks and knife cuts. The percentage of such damaged hides ranged from 12.6 in the Delhi slaughter house to 32 in the Bombay slaughter house recording an average of 20.7 per cent for all the five slaughter houses, viz., Bombay, Agra, Delhi, Garden Reach (Calcutta) and Tangra (Calcutta) where such records were maintained.

It is estimated that about 65 per cent of the slaughtered hides pass through the slaughter houses, whereas the rest, viz., 35 per cent are from animals slaughtered and flayed in villages, where conditions for obtaining good results are less favourable. Although the village flayers may be expected to complete their job in a more leisurely manner, they do not have that much of practice or experience as the urban flayers.

Under practical conditions it may not be possible to eliminate the losses on this score entirely. However, with concerted efforts these losses can be reduced to a con-

siderable extent. The chief factor that stands in the way of improvements in flaying is the difficulty in impressing the benefits of good flaying upon the trade as the loss does not fall on any single individual. In fact, in other countries the payment of a suitable premium for better flayed hides and organisations of flaying competitions, etc., have resulted in improving the quality of hides. The former was tried, for a few years, at the AGMARK hide grading stations located at some of the larger slaughter houses in India. The results obtained within a short period of three years were encouraging as is evident from the table below :

TABLE 42

Improvement in flaying achieved through payment of premium to flayers

Year	Percentage of hides damaged by flay cuts
1937 (First year of the Scheme)	20.7
1938 (Second year of the Scheme)	16.7
1939 (Third year of the Scheme)	10.6

The figures were compiled from weekly returns furnished by the grading stations at Delhi, Tangra (Calcutta), Agra and Garden Reach (Calcutta) where about 1.4 lakh hides were graded each year. The amount of premium varied from 1½ to 6 pies per hide according to its grade and were paid on all hides free from cuts and flay marks except for 'Rejections'. A flayer generally received an extra remuneration of about Rs. 3 to Rs. 5 per month and the amount spent on premiums during the three years under review was approximately Rs. 5,000 or only about 2.3 pies per hide. But this resulted in saving about 20,000 hides from being damaged through cuts and flay marks during the three years and the net gain to the trade was many times the amount of the premium paid and this was achieved with the existing staff of flayers.

Even though much still remains to be done, quite a considerable improvement is being effected with the advent of the opening of flaying and carcass recovery centres and the scheme for the training of professional flayers in some States.

7.2. Curing

Hides are highly perishable and start decaying within a few hours after the death of the animal due to bacterial and consequent chemical action, the first visible sign of decay being 'hair slip' or loosening of the hair. It therefore becomes imperative that the hide should be so treated as to prevent bacterial attack. This is achieved by 'curing', the type of cure depending on the quality of hide, climate, materials available for curing, the length of time for which the cure is required, nature of the requirements of tanners or of the shippers, etc.

One of the common methods adopted is to dry hides with or without frames in the air without applying any curing agent. These may be treated with arsenic to prevent insect damage. Salt is also commonly used for curing hides, and in this case the hides are either wet-salted or dry-salted.

The order of preference for the various types of cured hides from the tanners is as under: (1) 'Green', i.e., untreated, straight from the slaughter house; (2) 'Wet-salted' which remains wet and pliable and can be tanned easily; (3) 'Dry-salted'; (4) 'Dry-framed' and arsenicated; and (5) Air-dried unframed (*sukti*) hides. The more important point in this connection is the skill and care with which the cure has been effected.

(a) *Suktis—Unframed dry hides.*—A common process adopted in curing hides by village *chamars* is drying the hides in sun or shade as this method is very simple and costs practically nothing. This is achieved by spreading the hides on the ground, flesh side up, for about 5 to 10 days, depending on the weather conditions. They are also dried over low bushes, branches of trees, etc., or by pegging them on the ground. The chief defect in this method of curing is that the hides become very hard (such hides are also known as 'flint-cure') and consequently become crumpled and lose their shape which is so highly valued by the tanner. Although *sukti* hides do not get putrefied easily, once these are exposed to a damp atmosphere, putrefaction readily sets in. Further, these hides are so hard that the tanner finds it extremely difficult to soften them during tanning. But by and large this method of curing has given place to better methods described below. Generally the weight of a *sukti* hide is about 40 per cent of the green weight of the hide and this makes their transport cheaper.

(b) *Dry-framed hides.*—Hides cured by drying but on frames are better than *suktis* as greater care goes into this method. The green hides are trimmed at the edges and superfluous flesh is removed by scraping. The flesh side is washed in the case of kips while in the case of buffalo hides the flesh side is just wiped with a piece of cloth to remove blood, dung, etc. The hides are then stretched and secured on wooden or bamboo frames by means of strings and allowed to dry in the sun for two to five days till they are properly dried. The frames are kept at an incline to avoid the rays of the midday sun striking the hides vertically. When the hides are dry they are folded down the back bone with the hair side in, and dried for a day or two in the folded condition. Care is necessary in folding as otherwise the grain cracks at the fold resulting in a long scar in the finished leather. Dry-framed hides were formerly prepared for export but due to the ban on export of raw hides this method of curing is not generally practised to any appreciable extent.

(c) *Arsenicated hides.*—Sun-dried hides, though they can be preserved for a longer period from bacterial attack, are susceptible to insect attack, the common insect being the skin, hide or leather beetle. To prevent this attack, dry hides are commonly treated with a solution of sodium arsenite which is highly toxic to such insects.

The stock solution is made by dissolving 10 lb. of caustic soda in a small quantity of water. This causes the water to become hot. While it is still hot, 35 lb. of white arsenic is stirred into the solution. The quantity is made up to 50 gallons with cold water. This stock solution is diluted 30 times in preparing the immersion bath for the hides. The arsenic bath, prepared as above, contains approximately 0.25 to 0.3 per cent of sodium arsenite.

The treatment is given by immersing or dipping each hide for about a minute or two in a trough containing the solution. The hides are subsequently re-dried in the sun or shade before packing. Hides so treated are called 'arsenicated' hides. This method was largely used for dry hides meant for export and now that such exports are banned this method is not in use to that extent.

(d) *Salt-cured hides.*—In this method of curing salt is employed as the curing agent. The principle of curing is the same, i.e., removing the water from the skin in the

shortest possible time. But in salt-curing, besides this action, the hide is also subjected to the preservative action of the salt. Salting should be done soon after the hide is flayed and the animal heat given off. Before salting, it should be ensured that the hide is clean, free from blood, dirt, etc. There are two methods of salting, dry-salting and wet-salting.

(i) *Dry-salting*.—The hides are generally washed with water and then a concentrated solution of the salt is applied to the flesh side with the aid of a brush. The hides are then dried in the sun generally by spreading them out on the ground with the flesh side up. One or two more applications of the salt solution are given during the day. Saline earth known as *khari* salt is commonly used particularly in regions with high temperature and humidity. As the production of this salt is confined to a small area in Bihar State which is contiguous to West Bengal, this method of dry salting is mostly in vogue in West Bengal. The salted hides are collected in the evening, folded lengthwise with the flesh side in and are stacked in piles of 20 to 30 pieces. For heavy curing 12 coats of the *khari* salt solution are applied, the entire curing being completed in three days. For light curing, only six coats are applied, four on the first day and two on the second day. When it rains and the hides cannot be spread out in the open for drying, the hides (after the application of a few coats of *khari* salt) are folded and piled. Drying and further application of more coats of the *khari* salt solution are done when there is sun again. As a thick crust of saline earth is left on the flesh side of the hides, hides so cured are termed 'plastered hides' although from the point of view of preservation these hides remain sound for a long time.

Because of its hygroscopic nature, common salt is not generally used for dry-salting.

(ii) *Wet-salting*.—The method commonly adopted in India is that of salting the hides in piles. A layer of clean, dry, common salt is strewn on a clean cemented floor or on a wooden board. The fleshed, and in some cases washed and drained, hide is spread on the layer of salt with the flesh side up. A sufficient quantity of clean dry salt is strewn on the hide and well rubbed into it by hand, the edges and udders receiving greater care. To prevent the flowing out of the brine solution (produced by the action of the moisture of the hide dissolving the salt) the edges of the hide

are folded and turned in. After this another hide is put on the first one with the flesh side up and the process repeated till about 50 hides are piled. Some curers do not make a pile with more than 20 or 25 hides. The brine that is produced diffuses through the hide and helps the drainage of the tissue fluids. On the next day another application of salt is given and a new pile made but this time the uppermost hide is laid at the bottom and so on. In other words the position of the hides in the pile is reversed. A quarter of the quantity of salt to be applied in full cure is used on the first day, half the quantity on the second day and the remaining quarter on the third day. Sometimes the curing is done in two days. The hides so treated are allowed to stand for about 10 days. The quantity of salt used ranges between 40 and 50 per cent of the green weight of the hide. A little more salt is needed for curing calf skins as they contain more moisture.

Wet-salted hides are softer and more pliable than dry-salted and flint-cured hides. Although wet-salted hides may last for several months, it is not advisable to keep them as such for more than two months due to the climatic conditions in India.

Tanners always prefer wet-salted hides unless they are able to get hides in the green condition. Dry-salted hides respond to the tanning process only after they are re-soaked. As compared to sundrying, the process of dry-salting renders hides much more resistant to insect attack. Although dry-salted hides are susceptible to the malpractice of 'loading' they are lighter than wet-salted hides and also keep longer in good condition.

7.3. Suggestions for Improvement in Flaying and Curing

Because of the progressive ban on the slaughter of cattle in various States, the tanning industry has to depend chiefly on fallen hides. It thus becomes more important to improve the quality of fallen hides in order to effect improvements in the quality of the finished material.

The natural output of fallen hides in the country is large, but because of the vastness of the country, they are cured and collected in small numbers not exceeding five to ten at a time in the initial stages. Considering the total annual production of hides and the number of villages in

India, the average production works out to less than four or five hides per village per month. *Chamars*, butchers, etc., who are engaged in the early stages of the trade are not very keen on taking to improved methods. However, some progress has been made in the elimination of mechanical defects by the establishment of carcass utilisation centres by some State Governments and by the Khadi and Village Industries Commission. Some States like Madras have introduced regular courses for the training of professional flayers. Although these have helped in a reduction in the mechanical defects, considering the area to be covered much improvement is still to be effected.

Curing of hides also needs improvement. Curing of hides into ordinary *sukti* may cause 25 per cent of them to have blisters and the rest are valued much less than those cured by frame drying or by wet- or dry-salting.*

As flaying requires adequate skill and experience and as bad flaying can cause considerable loss to the owner of the hide, it is necessary that all slaughter houses should have only trained and licensed flayers, licences being issued after a proper test of proficiency. The model rules for issuing of licences and particulars of proficiency tests could be worked out by a committee appointed by the Central Government in conjunction with representatives of hide merchants, veterinary departments, municipal authorities, butchers and flayers. Each licensed flayer in a slaughter house may be allowed to have only one 'under-study' to operate with him.

If necessary, special bye-laws may be introduced under the Municipal Acts to prohibit unlicensed flayers operating at the slaughter houses. The licensing authority should be the Municipality and there should be a Committee at each slaughter house to examine the flayers. It may be advantageous to replace the present piece-wage system by monthly wages for the licensed flayers.

The environment and facilities under which the flayers have to work have considerable influence on their efficiency. **The general construction of slaughter houses, with a few exceptions, is wanting in proper sanitation, ventilation, drainage, protection against rain, flies and crows, and

*Report on the "Preparation of Empire Hides and Skins" (1937).

**Report on the *Ad Hoc* Committee on Slaughter Houses and Meat Inspection Practices (1957).

in necessary facilities for proper ante- and post-mortem examinations. Slaughtering hooks, hoisting arrangements, etc., are generally non-existent or inadequate. Supply of water is often inadequate. Lighting arrangements are generally poor. Lairage arrangements are usually inadequate and very often the animals waiting there can see the operations going on in the main slaughter hall*.

In all modern slaughter houses in advanced countries, each animal is killed in an enclosed booth, or by itself. Thereafter it is hoisted by its hind legs and is allowed to bleed which is essential both for producing good meat and good hide. While the carcass is so suspended, the flaying is done by a team of flayers in whose presence it is conveyed on over-head rails. One person who is an expert in that operation may open the hide. Another may detach the hide around the belly and legs for which he may use special types of knives, with the proficiency of a specialist. The third flayer may detach the hide from the butt portion and the fourth may do the final take-off. This system may not be possible at all Indian slaughter houses but, at most of the larger ones, there are usually several butchers (or owners of animals) each of whom gets 10 to 15 animals slaughtered daily. They also have 6 or 8 flayers engaged for flaying their stock, but there is no division of operations and each flayer does the entire flaying. Provided there were arrangements for hoisting the carcass, even without a movable gear, six to eight animals belonging to the same butcher could be hoisted and the four or five flayers, specialists in their own part of work, could operate on these animals by turns and perform a really good job. The understudies, for example, might operate on the belly and the more experienced men on the back and the butt, which are the most valuable portions of the hide.

It is worthwhile here to reproduce the relevant recommendations of the *Ad Hoc Committee on Slaughter Houses and Meat Inspection Practices* (1957):

“Systematic collection, efficient preservation and processing, and full utilisation of all slaughter house by-products and wastes should be properly organised in all towns.

*Report of the *Ad Hoc Committee on Slaughter Houses and Meat Inspection Practices* (1957).

"All slaughter houses should provide and maintain in workable condition adequate hoisting arrangements to facilitate proper flaying and dressing, and the use of modern tools by flayers should be insisted upon. Salt for curing and modern flaying tools should be made available for sale on slaughter house premises. Flayers should also be fully trained and licensed, and rules for the examination of flayers, conditions of licence, etc., should be framed on an all-India basis. Sale of hides and skins should be on the basis of their quality—for which a reliable system of grading should be introduced—and sale by forward contract should be forbidden. Hide curing yards should be provided at or close to slaughter houses."

Introducing any improvement in flaying of fallen carcasses in villages, as these constitute the largest source of hides, is not an easy affair although there is considerable scope and necessity for action in this regard. Some measures which can bring about improvement at least in the long run are enumerated below:

(1) Legislation should be enacted in all the States enabling panchayats and local bodies (as the case may be) to let out the right of collection of carcasses by public auction to a contractor after paying due compensation (to be fixed every year) to the owners. A proper flaying location and a bullock cart for transporting carcasses to the flaying centre should be provided by every village panchayat/local body. No carcass should be allowed to be buried without the prior permission of the local revenue official. All carcasses should be handed over to the Panchayat or the duly appointed contractor, as the case may be. It should also be made obligatory on the contractor to employ only trained flayers, preferably licensed.

(2) Peripatetic demonstration parties consisting of expert curers, tanners and skilled technicians should train the village artisans not only in the proper curing and tanning of hides but also in their rational use. These parties should impart practical training to the indigenous producers and tanners on modern techniques as of late there has been an increase in the number of village tanneries with a consequent rise in village tanning.

Good work is being done in this direction by the Khadi and Village Industries Commission through whose aid many carcass utilisation centres have been established in the

country. Many of these centres, however, are not functioning as efficiently as they should, for want of adequate supply of carcasses. The Government of Uttar Pradesh has also set up some such centres in various parts of the State. The Government of Madras has set up a training course in flaying at the Madras Veterinary College. In spite of all these, much still remains to be done by way of effecting improvements in the collection and curing of carcasses in villages. Effecting improvements in flaying and curing of fallen hides in villages is a long-term task and is by no means easy to achieve. It is only through unceasing and concerted efforts that improvements can be brought about particularly in village conditions.

The State Veterinary and Animal Husbandry Department officials and the officials in charge of Block Developmental Schemes can render considerable help in doing propaganda and demonstrating improved flaying and curing to *chamars*, butchers and others.

7.4. Improvements in Curing Methods

The old method of drying hides on the ground without any frames produces a poor quality material. The best method of drying with the least damage to the hide is the 'suspension' method which is a modification of frame drying, now followed in India. The equipment required for this process is quite simple and is well within the reach of the village *chamar*. In this method two poles are fixed on the ground five to six feet apart from each other, depending on the size of the hide, in a line running east to west. A horizontal pole is then tied to them about five to six feet above the ground. The hide is then suspended on this pole clear of the ground by tying the tail butt and hind-shanks to the poles with ropes, and then tying the head and fore-shanks to pegs on the ground. During drying no portion of the hide is allowed to touch the ground. The pegs are placed on the line of the shadow thrown by the horizontal pole at mid-day. The hide, with the flesh side up, is thus stretched at an angle with the ground so that even if it rains the water can run off easily. Further, the rays of the mid-day sun strike it obliquely and their effect is less than if the hide were spread flat on the ground. The method is claimed to give results which were almost equal to those obtained by drying hides in shade or dry-salting them.

The 'suspension' method and the frame drying method are most suited for all hot countries where drying of hides is practised, and both these can be adopted for improving the quality of the *sukti* hides. *Chamars* can easily learn these methods even with one demonstration. Organisations connected with rural uplift work should, therefore, pay special attention to this line of development, the adoption of which would directly benefit the poorer members of the villages in the form of higher income for the cured hides.

The peripatetic flaying demonstration teams, discussed earlier, should also attend to the introduction of the correct methods of curing under village conditions. The demonstrations of 'suspension' and 'dry-framed' methods of curing sun-dried hides, the correct methods of applying salt, either for wet or dry cures based on research work conducted by institutions like the Central Leather Research Institute should form an integral part of the programme. Demonstrations of flaying and curing might be given at the *hats* or *shandies* where a large number of *chamars* assemble to dispose of their hides or to purchase their requirements.

Dry-salting with khari salt.—Adulteration of *khari* salt needs to be effectively checked. Instead of using the natural deposit of *khari* salt whose composition is variable, artificially prepared mixtures of salt having curing property equal to or even better than *khari* salt may be used with advantage and this would ensure adequate curing almost always. To prevent 'loading' of hides the trade associations should resolve against the purchase of *khari* cured hides on a weight basis and instead induce their members to buy them on 'per piece' basis or 'per score' basis only as is the practice in some markets. Propaganda in this respect will be advantageous.

7.5. Improvements through the Establishment of Co-operative Societies

It was reported that, at times, the owners of cattle pay the *chamars* a flaying fee and market the hides of their dead animals themselves. In such cases the owners of cattle may, with advantage, be organised into flaying, curing, grading and hide marketing co-operative societies, the management of such societies taking charge of dead animals, their proper flaying, suitable curing and marketing.

At places where the indigenous tanning industry is developed *chamars* and other tanners may be organised into co-operatives and these societies may obtain the cured hides from the former group. Further, where the making of country shoes is important, the village shoe-makers can also be suitably organised for the purchase of the co-operatively cured and tanned hides and for the sale or marketing of shoes made by them.

To ensure an efficient management of the societies in each group and to enable the appointment of proper advisory and supervisory technical staff, the allied groups may require the establishment of a "Hide and Leather Industries Co-operative Union" to which the various societies may be affiliated. The Union should market the improved hides at the best available price. To stimulate the establishment of societies and unions, it may be necessary in the early stages for the State Governments to guarantee some bonus on all improved hides. Establishment of such societies and their linking up with the terminal markets for profitable marketing besides directly helping the producers would also put hide improvement work on a satisfactory and sound footing. There seems to be considerable scope for improving and developing the different types of Indian cottage industries on the above lines. Intensive work in compact areas will help in achieving striking results which are essential for arousing spontaneous and popular support for any scheme designed to bring about a change in the existing methods. In some States there are co-operative societies functioning in this trade.

8. ASSEMBLING AND DISTRIBUTION

8.1. General

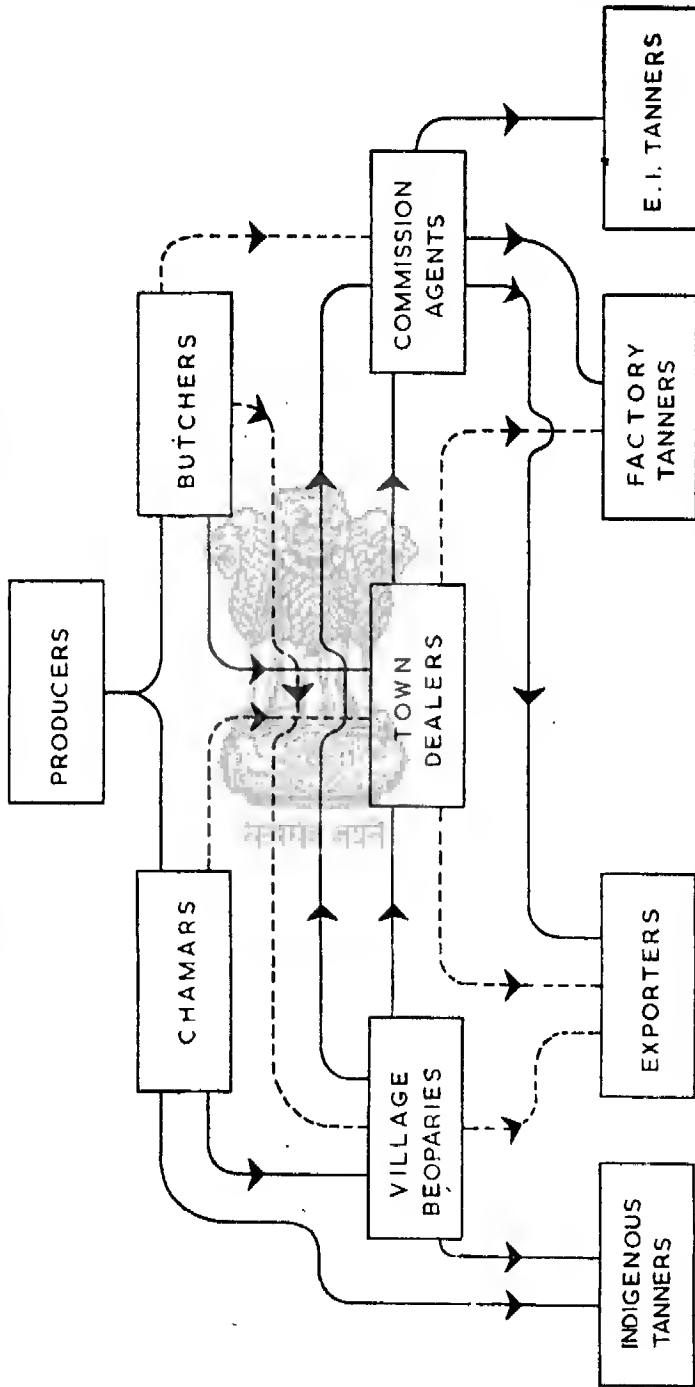
Assembling and distribution constitute the two most important phases in the marketing of agricultural commodities and livestock products. The expenses incurred, the time involved, the risks hazarded and the profits made by the agencies connected with these two services largely determine the share which the producer receives out of the price paid by the buyer or the consumer. In India the problem is of special importance owing to the small-scale and much too scattered production of almost all agricultural and livestock products. Consequently, a comparatively large number of intermediaries between the producer and the consumer becomes necessary, which, in turn, tend to reduce the price received by the producer and to increase that paid by the consumer.

The problems of assembling and distribution which confront the hide trade are, in general, similar to those prevailing in the case of agricultural commodities except those arising from the perishable nature of hides and attendant religious taboos restricting the number of communities dealing in hides to a few. In the countryside, the production of hides is not only scattered and on a small scale but also casual and irregular.

Besides, the primary assembler or producer (*chamar*) of fallen hides belongs to the lowest strata of the society and is extremely poor. His ambitions are limited and his financial condition prevents him from accumulating any stocks or from waiting for a better trend in the market.

The producers of slaughtered hides in the urban areas (butchers) are slightly better placed. Production is not so casual in their case and at each slaughter house *beoparis* or dealers are found operating on behalf of larger commission agents, tanners or shippers. Thus the butchers at the slaughter houses are, to some extent, in touch with the agents of the tanners or shippers. This places them in a better position and enables them to take advantage of the favourable turns in the market, as compared with the rural *chamars*. Although, in recent years, butchers have become more enlightened and educated, they are, as a class, rather conservative.

CHANNELS OF ASSEMBLING HIDES FOR MEETING THE REQUIREMENTS OF BUYERS.



(LESS IMPORTANT CHANNELS ARE MARKED THUS.....)

Due to these conditions, organised and large scale assembling and distribution of hides take place only at the important markets by merchants who possess foresight, business acumen and appropriate finance. But here also, unfortunately, due to lack of statutory grade standards much waste occurs and general dissatisfaction prevails everywhere, particularly with the buyers.

8.2. Agencies

The main channels of assembling and distribution of raw hides in the country are graphically illustrated in the diagram facing page 74. It also shows the system adopted by the three main buyers of hides, viz., (i) the indigenous tanners, (ii) the factory tanners, and (iii) the small-scale tanners, for procuring their requirements. The assembling and distributing agencies generally engaged and their functions are briefly described in the following table:

TABLE 43

Assembling and distributing agencies and their general functions

Agencies		General functions
Main groups	Sub-groups	
1	2	3
1. Producers	(i) <i>Chamars</i>	They claim, flay and preserve fallen hides and sell them to indigenous tanners, village <i>beoparis</i> and, occasionally, to commission agents. At times they tan the hides, and even make leather goods for local use.
	(ii) Butchers	They flay and sell slaughtered hides to local town dealers and occasionally to commission agents at distant markets. At times they cure the hides also.
2. Assemblers and distributors.	(i) Village <i>beoparis</i>	They purchase outright raw or cured fallen hides from <i>chamars</i> and sell them to town dealers, local indigenous tanners, and commission agents. They cure the hides, either partially or fully.

1	2	3
(ii) Town dealers	They purchase the hides outright from village <i>beoparis</i> and butchers and send them in small consignments for wagon loads to agents at larger markets or sale on a commission basis, or to the exporters and the factory tanners. They cure the hides, as and when required.	
(iii) Commission agents,	They receive hides on commission basis from various agencies and sell them after sorting and, if necessary, after curing to exporters, to the factories and the E.I. tanners.	

It will be observed that amongst the producers there are two sub-groups, viz., the *chamars* and the butchers. Amongst the assemblers and distributors there are three, viz., village *beoparis*, the town dealers, and the commission agents. Detailed descriptions of the functions of each are given below :

(1) *Producers* : (a) *Chamars*.—The *chamars* generally belong to the depressed classes, but they play a very important part in the rural economy of the country. They are known by different names in the various tracts but their functions are generally common throughout. In Northern India they are usually known as *chamars*, but in Southern and Western India they are known by various names, e.g. *mahars* and *khalpas* in Gujarat, *dhoers* in Madhya Pradesh and *dheds* in the Hyderabad area. One or more families of these people are found almost in every village, depending on its size and population. They are known as village *kamins*, and one of the services which they render to the village residents is to remove and dispose of the carcasses of dead animals. Through an ancient custom, they have a free right to such pelts in most parts of India.

In many villages, the *chamar* also functions as a tanner and, in that case, he tans his collection of hides in the indigenous way. *Chamars* of this class also have a free right to the fallen hides but periodically they have to supply free to the cultivators country shoes, certain plough gear

such as thongs, blinkers, head stalls, etc. In certain remote areas they also perform the important function of castrating the male calves—an operation never performed by the owner himself. For the services they render, *chamars* are given, besides hides, some grain at the time of harvest and cash gifts at the time of births, marriages, etc.

In certain areas, however, the free right to fallen hides is not conceded to the village *chamars*. In some parts of India the right of collection of hides of dead animals is generally auctioned to a contractor every year. Thus, the hides of dead animals belong to the State but, in most instances, the money realised is paid to the local *gousshalla* or *pinjrapole* for its maintenance. The contractor gets the hides collected through village *chamars* and sells them to the merchants, etc.

As already stated, the production of fallen hides is very casual and irregular. Besides, the product is highly putrescent and cannot stand storage for any length of time, unless properly preserved. Thus, after flaying, unless he is also a tanner, the *chamar* tries to dispose of his acquisition, with the least delay. He first of all tries to sell it in the green condition if there is a village *beopari* near at hand. If this is not possible, he usually dries the hide and sells it to the village merchant or carries it to a weekly *hat* or *shandy* and disposes it of there at any price which it may fetch. In this way, the village *chamar* acts as the primary agency in the assembling as well as in the distribution of fallen hides.

In the urban areas also, the dead animals are the property of *chamars*. They remove them to a place outside the residential limits, and flay off the hide. At times even the cost of transporting the carcass is borne by the owner of the dead animal. The urban *chamar* generally disposes of the green hide at the godown of a town dealer.

(b) *Butchers*: (i) *Rural areas*.—In some of the larger villages an animal or two may be slaughtered daily, but in the smaller ones the slaughtering is generally a weekly affair. At places, the day may coincide with the weekly *hat* or *shandy*, there being a special demand for meat on such days. The butchers dispose of the hides then and there to the buyers who are generally *beoparis* from the surrounding villages and who are invariably present at such periodical markets. In some cases, a butcher might play the

role of a *beopari* and purchase the production of his co-professionals and take the hides to the nearest town market. It has been reported that certain rural butchers practise this as a side occupation and sometimes employ even paid servants for the collection of hides. Butchers who collect hides usually possess curing yards also. Sometimes, they may not have to move out at all and may receive the supplies at their godown from other butchers of the surrounding villages.

During certain Muslim festivals, such as Id-ul-Zuha, the production of hides in some villages increases considerably. The slaughtering is done by butchers, but if they are not available at hand, anyone else does the job. Such hides are generally known as *kurbani* hides and are sold away to the butchers or to the village *beopari*. In some cases, the sale proceeds of the *kurbani* hides are credited to the village mosque fund.

(ii) *Urban areas*.—Butchers of the urban slaughter houses find a ready market for their hides. In most cases, local dealers or agents of tanneries purchase the green hides at the slaughter house itself. Sometimes, the hide is purchased by them on the back of the animal, i.e., before it is flayed.

Butchers who slaughter several animals a day invariably cure the hides at their own godowns and deal directly with a commission agent in an outside market.

(2) *Assemblers and distributors*: (a) *Village beoparis*.—Among others, those belonging to the *Sheikh*, *Khoja* or *Qassai* sections of the Muslim community play an important role in the assembling as well as distribution of raw hides. Quite a large number of hides produced in the country passes through their hands. In the rural areas, they bring both green and partially preserved hides from *chamars*, butchers and others. They also receive at their curing yards hides from their own and neighbouring villages. On the *hat* or *shandy* day, they visit the rural market for purchasing hides.

As distributors they carry or send their collection to the nearest town dealer. They also deal with the commission merchants at the larger markets and, occasionally, supply the goods direct to exporters. At times they may sell hides to the *chamar* tanners also.

The *beoparis* generally possess a small curing and storing yard. They employ a man to help them in their collection work as well as to look after the goods in store.

At times they despatch consignments in wagon loads, but, generally, they send the goods in small lots.

(b) *Town dealers*.—In practice, there is little difference in the mode of business or functions between the town dealer and the village *beopari*, except for the place of operation. At times, however, a village *beopari* may have a much larger turnover of business than the town dealer. When sufficient stocks have accumulated, the town dealers send the hides for sale to commission agents at larger markets. They sometimes supply goods direct to exporters and tanneries, or act as their purchasing agents. They also sell the rejections from their stock to the local tanners.

(c) *Commission agents or aratdars*.—These are important and well established hide merchants operating at larger markets. Apart from a much larger annual turnover, compared with the previously described agencies, there is a fundamental difference in their mode of business. While the town dealers generally buy the hides outright and incur the risk of deterioration in quality or fluctuation in prices, the larger city merchants or *aratdars* do business mainly on commission basis. They, however, have to invest larger capital and, at times, have to send money in advance to the village *beoparis* or town dealers. They possess extensive warehousing facilities, employ large staff, and their godowns serve as the final assembling and distributing centres for most of the hides. After a good deal of sorting, they offer their clients' goods to the various large-scale buyers, e.g., factory tanners, East India tanners, and charge a commission on the completion of each sale transaction. Sometimes they may purchase hides on their own account also and dispose them of to the usual buyers. It will thus be seen that these merchants act also as large-scale distributors who often execute outstation orders.

8.3. Hide Markets

At some stage or the other, all hides, except those retained in the villages for indigenous tanning or used raw, pass either through weekly markets in the rural areas or through terminal markets in the large cities. In India, all markets, as a rule, deal in a variety of commodities including raw or tanned hides and skins, and except in a few

cities like Calcutta and Bombay, one rarely finds a market specially for selling hides or skins. A list giving the names of some of the important hide markets in India with the approximate number of hides arriving daily at each place is given at Appendix VI.

Rural.—As already stated, a good proportion of the hides in rural areas is sold to the village *beoparis* and collectors by the *chamars* and butchers on their own premises. Some of the hides are also delivered by the producers at the godowns of the village merchants and the tanning yards of the rural or indigenous tanners. The remainder is sold in the weekly *hats* or *shandies*.

Invariably, in all periodical markets, a place is allotted for the sale of hides. This generally comprises an open space, sometimes under the shade of some trees. Here, the producers of hides from the neighbouring villages gather and the intending purchasers who may be village *beoparis*, agents of town dealers, commission merchants, etc., buy up the stock. The *beoparis* or the collectors might also dispose of the inferior pelts from their collection to the local tanners at such markets.

The weekly *hats* or *shandies* are quite common throughout the country, but the practice of selling hides in such markets is more prevalent in the South than in the North. In the latter zone, i.e., in the Punjab, Uttar Pradesh, Bihar, West Bengal and Assam, sales at village merchants' godowns or at the premises of producers are more common. In the South, the number of raw hides assembled at big weekly *shandies* is sometimes as high as 300 to 400 pieces on a market day.

The rural markets are either owned by district boards or by zamindars. They generally charge a market fee from all people who assemble there for the sale of their goods. As a rule, the right of collecting the market fee is given on an annual contract basis, but the contractor has to abide by the rates fixed by the owner. For the sake of convenience, fees are levied either per seller or on the basis of the type of transport (head-load, horse, camel, etc.) in which goods may have been brought, as this is supposed to indicate the quantity brought for disposal. Those who bring head-loads pay the least and the cartmen the highest. The rates differ considerably from market to market.

Urban.—In towns and cities the slaughter houses themselves constitute the primary market places for slaughtered hides. Prospective buyers assemble every morning at a slaughter house and purchase the hides as they are flayed, either singly or in lots. At larger slaughter houses where a butcher may have slaughtered several animals, the hides are invariably sold in lots—small and large, good and bad, kips and buffs, all together. At places where the practice of selling the hide on the back of the animal before slaughter is prevalent, these pelts are straightway carted to the buyers' godowns.

The godowns of the hide merchants are not located in any specially constructed market place answering to any plan or design. They are, however, usually all confined to a particular locality only. At places, the existence of a canal, railway goods yard or a tannery may influence the location of hide godowns.

The site originally chosen for locating the godown is usually outside the town or city, mainly for two reasons. Firstly, the sight and smell of raw hides are unsavoury and repugnant. Secondly, as the hide merchants require large space for curing and storage, the necessary space can be had cheaply only in the outskirts. For similar reasons, the slaughter houses also were placed outside city limits. But with the growth of urban population and consequent expansion of the towns and cities, the hide markets in most cases, and also the slaughter houses in some cases, have now come within the limits of the town area proper.

The hide godowns are not always constructed according to a definite plan, but they generally have a resemblance of uniformity in design. The merchants' godowns, offices and sometimes their residential quarters are all in the same premises. The godown generally comprises a large piece of land walled on three sides. On the fourth side there is a large gate which constitutes the only entrance to the godown. The gate is usually wide enough to allow loaded bullock carts and lorries to pass in and out. Near the gate are situated the office and a few residential rooms, usually for merchants who may be visiting the firm. The rest of the space is taken up by preparing and unloading yards and rooms for the storage of hides. The size and construction of the godowns are often an index of the extent of business and prosperity of the merchants.

8.4. Methods of Sale

(i) *In villages*.—Hides are sold or purchased in the villages through direct negotiation. The buyer examines each piece and offers a price. The *chamar* is generally ignorant of current market rates and tendencies and can at the most rely upon the price realised by him on some previous occasion. The purchaser naturally makes full use of the situation and invariably succeeds in securing the goods at rates considerably lower than the prices current in the market. This is particularly so when the deal is transacted on the premises of the *beopari*. At a weekly *hat* or *shandy* where several buyers and sellers may be present, the element of competition helps the seller to some extent in getting better prices.

(ii) *At slaughter houses*.—The systems adopted for selling the hides at the slaughter houses differ to some extent from tract to tract. In the North-West, butchers collect the hides for the examination of buyers when the latter present themselves at the slaughter houses. After an examination of the hides, the buyers, one by one, whisper their bids for the lot to the seller and it is sold to the highest bidder. The sale of hides on the back of the animals before slaughter is not common in the above area.

In Uttar Pradesh, both the types of sales, *viz.*, before and after slaughter, are common. The former is effected by examining the animal at the butcher's *bara*, shortly before slaughter, and settling the price per hide. Whenever the above method is not followed, the hides are generally sold by auction at the slaughter houses but the bids may not be given openly. At the Tangra (Calcutta) slaughter house, purchase of hides before slaughter is common but the prices may be fixed at the slaughter house itself, soon before killing the animal, *sotto voce*.

In the States of Madhya Pradesh and Madras, the butchers are given loans (generally without interest) by the hide merchants for the purchase of animals, on the condition that all hides are sold to them at a price settled beforehand or at the current market rate. In the States of Mysore and Andhra Pradesh and at the city slaughter houses of Madras and Coimbatore, *ante-mortem* sales are common but the prices are settled long before slaughter. At the Bandra (Bombay) slaughter house the tannery

owners enter into contract with the butchers (sometimes through a middleman) once in three months, to purchase all hides at a fixed rate.

(iii) *At larger markets.*—The village *beoparis* and town dealers generally consign their stock only to those commission agents with whom they have business relations of long standing. It was observed that even some of the old established district merchants possessed the names and addresses of only a few commission agents at one or two markets. Sometimes the Commission agents themselves appoint the town dealers as their hide purchasing agents. They indicate to them the price and the quality of hides and also provide the necessary funds. Generally a commission of fifty Paise per hide is allowed to such agents.

The commission merchants receive hides from the dealers in the districts once or twice a month, as the case may be. On arrival, the hides are examined and up to 75 per cent of their approximate value is remitted to the supplier. The balance is sent after sales, after deducting the merchandising charges. At some places, the village *beoparis* often accompany their stock and stay with the commission agents for about a week or so.

In case the commission agent has some outstation orders on hand, he may do the necessary sorting and make up the required consignment himself, and despatch the same at the risk of the final buyer. For ex-godown sales, the buyers or their agents examine the hides, settle the price (per piece on a weight basis) and clear away the goods. When several buyers are present at the commission agent's godown to purchase a common lot, an open auction may take place or the bid may be given under cover.

Sometimes, when they cannot be sold, the "rejections" may be sent back to the areas of production in the districts, for re-sale to the *chamars*. It is obvious that the absence of trading on the basis of standard grades in the preliminary stages of marketing is responsible for this wasteful practice.

That the system of marketing as described above is not at all conducive to the healthy growth of the industry, does not need further elucidation. The practice of selling hides on the back of the animal itself is sufficient to foil all efforts towards effecting improvement in the flaying and better take-off, as the interest of the butcher ceases entirely

once the hide is sold. By not dealing on the basis of standard grades, almost all the agencies remain, so to say, at the mercy of the commission agents, in the matter of sorting, grading and selling of hides. The latter, in turn, have to depend exclusively on the requirements and buying limits of the exporters and tanners. The last named agency also works at a handicap and cannot send open offers in the absence of an assurance regarding quality. There is, therefore, no wonder that the hide trade has remained unorganised in spite of its importance. The solution lies in introducing effectively a system of grading and marking the hides in large quantities by an independent and reliable agency according to pre-determined and known specifications.

8.5. Merchandising Charges

Rural markets.—The producers of hides (*chamars* and butchers) pay very little by way of market charges. In many States there is no market charge levied in rural markets for hides. If the hides are taken to the bazar, a weekly *hat* or *shandy*, the producer is required to pay from six to twelve Paise as cess to the municipality in rural markets in the State of Maharashtra. In the Madras State 25 Paise per head-load (generally two hides) is charged.

8.6. Assembling and Distributing Markets

On an average, merchandising charges, which a seller has to pay at the terminal markets, range from 6 to 10 per cent of the value of the goods. There is, however, no uniform basis of levying the charges. They may be levied per piece, per score, on weight or on an *ad valorem* basis. In the same market, the charges differ from merchant to merchant and according to the type of goods, e.g., kip or buff hides. Sometimes the charges vary with each transaction.

The merchandising charges fall into three categories, viz., (i) charges incurred by the country dealers in consigning the goods to the commission agents, (ii) charges of the commission agents recovered from the sellers for clearing the goods and selling them off, and (iii) charges paid by final buyers to the commission agents.

(i) *Charges incurred by country dealers in consigning the goods to the commission agents.*—These vary from place to place according to local conditions, customs, means

of communication, etc. The following two examples—one relating to the State of Maharashtra and the other pertaining to the State of Madras—are illustrative.

MAHARASHTRA

(About 50 hides)

Packing and cartage to station including <i>hamali</i>	Rs. 1.50	to
per cart.	Rs. 1.75	
Rope or the bundle	Re. 0.75	
Expenses at the station	Re. 0.50	
	Rs. 2.75	to
	Rs. 3.00	

MADRAS

(Per piece)

Transport charges up to 48 km.	Re. 0.16
Salting and handling charges	Re. 0.25
Other expenses including incidentals	Re. 0.12
	Re. 0.53

(ii) *Charges of the commission agents recovered from the sellers for clearing the goods and selling them off.*—These comprise the following main items: (a) clearance and cartage charges, (b) octroi or terminal tax, (c) commission, (d) charity, (e) rebates, (f) allowances, and (g) miscellaneous charges. A brief description of these is given below:

(a) Clearance and cartage charges are incurred by the commission agents on behalf of their clients in taking deliveries and transporting the goods to their warehouses. A small amount, generally about twenty or twenty-five Paise per bundle is paid to the clerks, watchmen, etc., at the goods sheds for prompt delivery and careful custody. The other item is cartage to godown including loading and unloading. This varies from place to place and depends upon the size of the bundle and the distance of the godown from the railway station. These range from about Re. 0.25 to Re. 0.50 or even more per bag of about 1 quintal.

(b) Octroi is levied in many places on the goods arriving there. As in the case of other commodities the rates of octroi vary from market to market.

(c) *Commission*.—This constitutes one of the main items of expenditure and varies widely from market to market. The charge covers all the services which the commission agent renders towards sale of goods. The commission is generally payable only by the seller of hides.

TABLE 44
Commission charged by the agents on sale of hides

Name of market	Rate of commission
Hyderabad	(i) 0.50 P. per hide (ii) 2% on sale value
Madras	2% on sale value
Bangalore	3% on sale value
Bombay	2% on sale value

(d) *Charity*.—Under this item, a charge is levied for the maintenance of temples, *dharmashalas*, etc., in the case of Hindu merchants (who are very few in the hide trade) and for maintaining mosques, *sarais*, schools, etc., in the case of Muslim merchants. The deduction is generally made on an *ad valorem* basis and varies from six to twelve Paise per Rs. 100.

(e) *Rebate*.—Rebate is allowed by the commission agent to the buyer for paying the amount due to the former within a specified period. In most North Indian markets, a rebate of seventy-five Paise per hundred rupees is allowed to the buyer. The time limit for this rebate may, however, vary from a week to a month in the different markets.

(f) *Allowance*.—According to the local market custom, in certain areas an allowance ranging from 1 to 5 per cent of the unit weight is allowed to the buyers to cover dirt and other extraneous matter which might be adhering to the hides. This is known as *chhaot* in the Punjab and *kattoti* in Uttar Pradesh. In the former the rate is 1 to 2 per cent of the unit weight. A larger deduction may also be made if the hides are very badly prepared and contain abnormal quantities of extraneous matter.

(g) *Miscellaneous charges*.—Under this item are included all other charges to cover *munshiyana*, *hisabana*, postage, telegraph expenses, storage, etc. These may be charged on the number, weight, or value basis. Compared with the commission, this is usually a small charge and generally comes to about 25 to 50 Paise per Rs. 100.

(iii) *Charges paid by final buyers.*—In case the raw hides are purchased locally at a market, the expenses incurred by the sellers are small and consist of trimming, dusting, turning and showing the goods to the buyers. This works out to about a rupee for twenty hides. In some cases a commission of two per cent is charged from the buyer. In case the hides are required to be sent to an outstation, the expenditure incurred is the same as those incurred by the country dealers in consigning goods to commission agents and these are charged from buyers.

8.7. Financing of Assembling and Distribution

(i) *Producers.*—*Chamars* who are producers of fallen hides generally get them free and do not, therefore, ordinarily need any finance. In areas where they are required to pay to the owners of the animal a proportion of the value of the hide, they do so after the pelt has been actually sold. This class of people is, however, very poor and always in need of money. The rural collectors, particularly in parts of South India, give them small advances on the understanding that they would sell their production to the creditors.

Slaughtered hides constitute a by-product of the meat industry. Butchers generally depend on their own resources for the purchase of the slaughter stock. In many places they also take advances from hide merchants on the promise that they would sell their production to them. The system of selling hides on the back of the animals a day or two before slaughter which is common at some of the larger slaughter houses, in a way, enables the butcher to get some financial assistance from the purchasers of hides.

(ii) *Merchants.*—The village *beoparis* or town dealers generally possess their own capital. Sometimes they borrow from the local *sahukars* or from the wholesale merchants with whom they may have long established business connections. The latter do not ordinarily charge interest on such advances but make allowance for it in the prices. In case the *beoparis* are required to supply hides on a commission basis, the town or district merchants provide them with the necessary funds.

The wholesale merchants and commission agents depend on their own resources or may receive help from

a bank, tanner or exporter. They have to invest large sums of money in their business which sometimes exceeds several lakhs of rupees.

Buyers clear up their accounts with the commission agents within a specified time prescribed in the various markets. In regard to outstation sales, the commission agents tender the railway receipt to their bank and draw cash immediately. The bank collects the value before delivering the receipt to the buyer. When the goods are transported by road, the realisation is often made by *hundis* or demand drafts. Where banking facilities are lacking, prices are realised by the merchants from outside tanners by despatching the railway receipt by V.P.P.



9. QUALITY AND GRADING

The quality of a hide depends on a large number of factors and its correct determination requires a great deal of experience and skill. The breed, the sex and the age of the animal, the tract to which it belonged, the manner in which it had been maintained, the diseases it had suffered from, the part of the year and its condition at the time of death or slaughter, the way the hide had been flayed, cured, stored, transported and handled, all go to make the quality of the hide as well as that of the leather made from it. The chief factors taken into consideration by the trade at the time of determining the quality are briefly described below.

9.1. Quality Factors

While making purchases, buyers look to (a) the size and pattern, (b) the substance, thickness and weight, (c) the grain, (d) the method of curing, (e) the mechanical defects on the hair and flesh sides of each hide, (f) the biological defects, and (g) other factors. Larger, thicker, well-cured hides from comparatively young animals, and free from blemishes, are, as a rule, prized by the trade and the others relatively discounted.

(a) *Size and pattern.*—Although large pieces have their special demand for preparation of upholstery and harness leather, they are generally preferred by all because the losses in cutting, etc., when preparing manufactured articles, are much less in their case, compared with smaller hides. A large hide should, however, not be confused with a loose textured, spready hide—a condition much disliked by the tanner. The regularity with which the hide is cut open, the position, direction and straightness of the cuts by which it is taken off from the carcass, contribute towards a good or bad pattern. Hides neatly cut at the edges with as little wastage as possible and in such a way as to spread flat on a level ground, are termed as “well trimmed”. The production of a good pattern hide is the result of experience and practice. A bad pattern or trim may not prevent its disposal but is certainly responsible for price discriminations, particularly at the time of low demand and large supplies.

(b) *Substance, thickness and weight.*—These are some of the most important quality characteristics of a hide and determine its suitability for making various types of leather. Hides, the fibres of the corium of which are tough and firmly interlaced and have a strong structure, are known as substantial or plump. A plump or stout hide is generally heavy but a heavy hide is not necessarily plump. For example, the hide of an old animal may have tough fibres and be heavy, yet it may not be plump and may produce only spongy leather.

(c) *Grain.*—Closely related to the above factors, and even more important, is the nature of the grain which a hide possesses. In the production of all high-grade leathers, the quality of the grain is the most important feature. In the process of liming when the hair is removed, the arrangement of hair pores, characteristic of the pelts of different animals, becomes visible and constitutes what is known as the 'grain pattern' of the hide. Good grain, i.e., smooth, fine and flawless surface, without any scratches, wrinkles or goad marks, is of utmost importance in the evaluation of the quality of a hide. To a large extent, the quality of leather depends on the grain pattern of the raw material except in the case of the stuff used for sales and mechanical purposes. In the raw hide, the type and the condition of the coat (hair) are indications of the quality of the grain underneath. Leather made from hides having 'bad grain' has an imperfect and unattractive finish. Besides, if the leather is broken or weak at any point on the surface it loses much of its utility. For this reason, hides otherwise good but defective in grain lose much of their value and go down considerably in their quality.

A new method of making printed grain has been evolved by which the defective grain side of an otherwise good hide is buffed with fine emery papers, then sized with certain chemicals and later embossed with the desired grain pattern. This has, in a way, helped the tanners to make use of a larger number of hides for certain purposes than was possible before this method was evolved.

(d) *Method of curing.*—The methods whereby hides are temporarily preserved from putrefaction have already been described in Chapter VII. The order of choice in which the local tanners purchase the hides is: (i) untreated or green, i.e., fresh from slaughter house, (ii) wet-salted, (iii) dry-salted, (iv) dry-framed, and (v) unframed air-dried or

sukitis. This gradation is dependent upon the ease with which each of them can be tanned into leather.

The quality of hides cured by any of these methods depends upon the proficiency and care with which the operation has been performed. With a view to increasing the weight many times, hides are 'loaded' with blood, mud or salt and some of the unnecessary appendages as tails, ears, etc., are left untrimmed. Loading is also practised for concealing defects like sores, flay marks, warble holes, etc. This practice considerably brings down the quality or selection of the 'hides' put in the market.

(e) *Mechanical defects*.—Yoke or gall marks, cuts, scars, etc., on hides which arise from bad flaying, branding, goading, accidents, etc., fall under mechanical defects. The effect of flay marks on quality has already been discussed in Chapter VII. The other mechanical defects are briefly described below:

(i) *Branding*.—Animals are branded with hot iron rods either for the purpose of identification or as a remedy against certain illnesses like sprain, lameness, colic, etc. The rump is most often the place chosen for branding but as it happens to be the most valuable part of the hide the value of the hide is considerably reduced.

The Hide Cess Committee appointed by the Government of India as far back as 1929 had focussed Government's attention to the great loss suffered by the nation due to indiscriminate branding of animals. Since then this has been repeatedly brought to the notice of the Government but the practice still continues in many parts of the country like the States of Maharashtra, Andhra Pradesh, Rajasthan, etc. In the South it is said that at times owners deliberately reduce the value of the pelt through widespread branding lest the village *chamar* should poison the animal for the sake of its hide.

In any case the practice should be discouraged whenever it is prevalent through efficient and effective propaganda. The use of indelible tattooing inks for identification should replace branding. Increased facilities for veterinary aid may also help in eradicating the evil. Smaller marks placed on less valuable parts of the hide, e.g., on the cheek or dewlaps or below the knees, would serve the purpose of identification.

(ii) *Goad marks*.—These are restricted to the hides of draught animals. Sharp pointed goads are used for driving oxen and buffaloes which generally scratch the butt of the hide and at times even puncture it. The value of the hide may be reduced by Rs. 2.00 or even more per piece on account of goad marks.

(iii) *Yoke marks*.—These are also confined to draught animals. At the place where the yoke rests, a thickened patch develops on the neck, and the more the animal is used, the bigger the patch. Badly adjusted yokes or uneven height of animals in a pair tend to enlarge the area of the yoke mark unduly. The grain of this area is completely lost and the portion becomes useless for leather making. The neck portion is not, however, so valuable from the point of view of high class leather and the discount on account of yoke marks is much less compared with goad marks.

(iv) *Scratches and punctures*.—These defects arise from miscellaneous sources, such as jungle thorns, barbed wire fencing, rubbing against rough surfaces, horning by other cattle and from vulture pecks in the case of dead animals if the hide is not flayed in time. Many hides, otherwise good, are known to go into the lower grades on account of the above-mentioned blemishes.

(v) *Other injuries*.—Serious damage to hides takes place as a result of dragging the animals in slaughter houses against rough surfaces before or after slaughter. Similarly, fallen hides are often damaged due to dragging of the carcasses from the place of death to the place of flaying.

All the mechanical defects enumerated above can be reduced considerably through care and skill on the part of those who handle the animals or the hides and thus the great loss to the hide industry and trade could be prevented. It may be observed here that there are certain traditions in India, according to which bodies of animals are disfigured and branded in several ways with red hot iron, so also, while the dead animals await the arrival of a *chamar*, vultures damage the upper side of the carcass and the scorching ground spoils the lower. Propaganda among the people concerned, that if they minimise these defects they are assured of higher prices, can go a long way in effecting improvement.

(f) *Biological defects.*—Damages to hides caused through ravages of insect pests and diseases are classed under biological defects. These impoverish the hides and cause permanent injury to the grain. The leather from such pelts is weak and less resistant to abrasive wear. Amongst the insects and pests, warble flies, mange mites and ticks are the most damaging.

(i) *Warble holes.*—The warble fly is found in many parts of the world. In India, it is met with mostly in the dry parts of North and Western India, *viz.*, the Punjab, Rajasthan and the western parts of Uttar Pradesh. It does not seem to flourish in Assam, Bengal, Maharashtra and South India on account of the comparatively moist climate of these areas. In M.P., Bihar and Orissa it is met with only occasionally. The pest attacks generally cattle and not buffaloes.

Warbles damage the hides by causing holes in them generally 2.5 ml. in diameter, and render the resultant leather useless for many purposes. Whether they are rendered useless wholly or partly, depends upon the location of the holes; the holes or marks are generally counted before making the purchases. The damage in Northern India on this account is very great and, in some cases, the number of holes in a hide may even go up to a few hundred. Warbled hides are met with more frequently in the winter months (October-March) than in other parts of the year.

It is difficult to estimate the annual loss caused by warbles, but there is no doubt that it is enormous and that because of them many a good hide is completely ruined.

(ii) *Tick marks.*—Ticks stand second to warble flies in causing damage to hides. They are met with in the southern and eastern parts of India and the State of Madras is particularly tick-infested.

In order to suck blood the ticks make perforations generally on the thinner portion of the hides, *i.e.*, on the belly. They become tiny sores and, when healed up, make the grain surface rough and patchy which reduces the quality and, consequently, the price to an appreciable extent.

(iii) *Pock and other marks.*—These are small permanent marks left on the grain side of the hide due to ulceration, said to be caused through rinderpest, and are most common in West Bengal.

Mange and skin diseases also cause permanent injury to the grain and reduce the price of the hide and, in turn, the leather made from it.

A note on the biological factors affecting hides and skins prepared by Shri B. N. Soni, Research Officer, Indian Veterinary Research Institute, Izatnagar, is reproduced below:

"BIOLOGICAL FACTORS AFFECTING HIDES AND SKINS IN INDIA

According to the present market rates, the estimated value of hides and skins produced annually in India will not be less than Rs. 50 crores. It has been further computed that this raw stock is depreciated to the extent of not less than one-tenth of its value as a result of damage caused to it by warble flies alone, the ox warble fly and the goat warble fly. Although the monetary value of the loss resulting from the damage caused by ticks and the 'hide beetle' has not been estimated but considering the extent of depreciation suffered on the market value of each hide or skin affected, the financial drain must be enormous.

In view of the economic nature of the problem and continuous loss of the national wealth, the Government of India undertook to finance an investigation into the life history and bionomics and later into the question of suitable measures for the control of these pests. As will be seen from the results of this investigation summarised below, a decisive advance has now been made towards the control of the pests mentioned above. Detailed accounts of this work appeared from time to time in the journals and reports of the Government.

WARBLE FLY

Damage to hides and skins.—Nearly every farmer in Europe and America knows that the warble fly is a cause of serious damage to hides and goat skins, but in India, where this pest causes greater economic loss than anywhere else in the world, stock-owners and even the majority of hide merchants are unaware that the numerous small holes apparent in a large percentage of otherwise good hides and goat skins are the result of infection to the living animal caused by this insect.

Loss to livestock.—The Indian farmer who is not interested in the hide of his livestock may perhaps be indifferent to the losses sustained by his countrymen who deal in hides, but he would feel more concerned were he only to realise that his warble affected cattle suffer from loss of condition and a diminution of milk yield during the time the grubs of the fly are lodged just beneath the outer skin of the animal's back.

Warble fly control.—The methods for combating warble flies are: (i) preventive method, and (ii) dressing method.

Preventive method.—In view of the highly localised character of the site of egg-laying, it has been found that periodic singeing of hair on the legs of the cattle, during the egg-laying season (middle of March to middle of June), is the only effective preventive method of destroying the eggs. Between each singeing an interval of five to six days is recommended.

A simple and inexpensive singeing apparatus suited to Indian conditions has been devised. It consists of a thin iron rod, about four feet in length, with a handle at one end and a loop at the other. Through the loop a piece of coarse, old cloth is inserted and wrapped round the rod. The cloth is soaked in ordinary mustard oil and ignited. The flame is put out and the smouldering torch is gently passed over the legs of cattle so as to singe the hair ends.

Based on practical results, the average cost of singeing per head of cattle per season works out to about 70 Paise. A total of 40 head of cattle can usually be singed with one pound of mustard oil.

Dressing method.—The application of dressings on the warble tumours is now regarded as the method of choice for combating the warble fly pest. The dressing operations should commence in early October and last till the end of January, with an interval of about one month between each dressing operation. The following proportion is recommended :

Derris powder	1 part
Water	10 parts

A piece of coarse cloth or a brush soaked in the solution is rubbed over the entire back of the warble-infested animal. The cost per head of cattle per season (four dressings) works out to about 75 Paise.

One pound of derris powder is enough for about 40 head of cattle showing moderate warble infestation.

Benefits of control.—Efforts at controlling the ravages of warble fly may be recognised as of considerable economic importance to India. The hide merchant stands to gain financially by the improved quality of the hides and skins he deals in, while the country as a whole may expect a great increase in revenue.

Tick-bitten hides.—The injury caused to hides by the perforations made in the skin by the maggots of warble fly are familiar to some hide merchants. They are large and local (on the back) and form conspicuous blemishes that at once discount the value of the hide so affected. The smaller but much more numerous perforations made by ticks are less familiar to him because they are less obvious. But these are recognised by purchasers of hides as by no means negligible blemishes, not only because they are punctures in the hide substance, but by reason of the permanent stains that surround each puncture, which are apparently co-extensive with the area where inflammation caused by the tick-bite has extended.

The blemishes caused by tick bites are variously described by experts in handling hides as:

"Abrasion upon the grade of the hide."

"A break in the grain of the finished leather."

"Spotted and make a very poor leather."

"Black spots in the leather."

Depreciations in raw hides.—In conformity with the fact that the ecological conditions obtaining in India are very favourable to the increase of the tick population, it has been found that in certain villages it is difficult to detect even a single animal as being free from tick infestation. Repeated observations made by tanners and exporters have led them either to reject completely or heavily depreciate in value the raw hides raised in certain areas of the country called 'ticky' areas. On this account the value of a large proportion of hides produced in Bengal and Madras are depreciated to the extent of 50 per cent of the price, by the Chrome Leather Co., Madras. Similarly, Kanpur tanners have intimated that 50 to 60 per cent depreciation in price is caused by ticks alone in nearly 20 to 30 per cent of the total stock produced in Uttar Pradesh and Punjab.

Tick damage and grained leather.—A large percentage of the chrome leather now produced in India is finished with the grain left on, so that all imperfections and tick marks on the grain side show very plainly. In olden days the leather for uppers of shoes was made from bark tanned stock and was buffed and the grain removed. For this, leather tanners could use cheap hides that were covered with imperfections and tick marks. The situation to-day is very different as there is an increasing demand for grained leather, and, for this, a large proportion of Indian hides cannot be utilised until the tick is eradicated.

Control of ticks.—During recent years, DDT and Gam-mexane have been brought into use in the field of tick control on account of their non-poisonous properties and superior tickicidal value. Both these drugs have been subjected to a series of trials and have proved highly effective against the common types of cattle ticks occurring in India. It was found that DDT powder, made into an emulsion with kerosene oil and liquid soap to a concentration of 0.5 to 1.00 per cent., destroyed ticks at all stages within a short time. Further observations had shown that a tick-infested animal treated with DDT had improved its condition to the extent of 50 lb. gain in weight within a period of ten weeks.

Next to warble flies and ticks, the most important biological factor causing an enormous financial loss to the hides and skins industry in India is the hide beetle, also known as leather beetle. Unlike warble flies and ticks which affect the hide or the skin during the life time of the animals, the hide beetle causes damage during storage of raw stock. As a result of the inadequacy of transport facilities a large proportion of the Indian hides and skins are stored in dark and damp godowns, before transporting them to the nearest tannery or to a sea port for foreign export.

The incidence and intensity of damage is higher under warm and moist conditions and in dry cured hides and skins than in those which have been preserved under wet salted condition. Presumably salt plays the role of an insecticide and the salted hide substance is perhaps unpalatable to the insect which as a rule eats into the flesh side of the hide or the skin.

Control measures.—Prevention is better than cure is the maxim which applies most appropriately in checking the enormous financial losses caused by the beetle to the industry of hides and skins in India. It is not only the

pre-application of Gammexane and DDT which act as insecticidal and repellent agents but wet curing of raw stock with an adequate quantity of common salt, proper aeration and periodic exposure to day-light of the hides and skins stored in godowns with cemented floors, would go a long way in checking in large proportion of the financial drain suffered by the industry as a result of the hide beetle attack.

The chemical method of prevention against leather beetle employed generally at present, is known as arsenication or 'poisoning' of the hides and skins in storage. Although the process is known to yield fairly satisfactory results, lack of technical knowledge required in the preparation and application of the solution and its poisonous properties is a considerable drawback for its adoption in this country.

Comparative tests carried out under laboratory conditions have shown that Gammexane powder at a concentration of 2.5 per cent in talc powder, when dusted to form a thin film on the flesh side of the infested hides, causes a mortality of 85 to 90 per cent among the beetle larvae and is followed by 30 days as a period of protection from re-infestation by the parasite. Four ounces of Gammexane powder mixed in talc is considered enough to dust nearly eight cow or ox hides or about 15 goat and sheep skins.

Cost.—Taking into account the cost of labour involved and the price of muslin bags, through which the powder is dusted, the total expenditure for a consignment of 100 hides or double the numbers of skins, works out to about three to four rupees.

In view of its non-toxic properties to man, and easy availability in the form of ready-made powder, Gammexane may, in due course of time, replace the present method of arsenication for prevention or control of hide beetle in India."

(g) *Other factors*: (i) *Age*.—The hide of an old animal is, in many ways, inferior to that of a young one. It is usually not strong and is papery with little substance. Good quality leather cannot be made from it and is mostly discounted by the hide trade.

(ii) *Part of the year when killed or dead*.—On account of good climate and pasturage, the animals are in better

condition in winter than in summer. Winter hides are, therefore, plumper than the summer ones and fetch a comparatively high price. In cured hides reaching markets after some time, the hair is taken to adjudge the period of slaughter or death. In summer the hair is shorter and less dense than in winter when they are shiny, denser, long and glossy.

(iii) *Storage*.—This is another important factor affecting the quality. Hides kept over long periods, or under improper storage, deteriorate. The damage may be due to dampness, heat or insects, vermin, rats and even white ants. The period of safe storage depends upon a number of factors, viz., atmospheric conditions, construction and ventilation of the godowns, the type of cure, handling of the hides, etc. Generally, merchants try to dispose of their stock as quickly as possible but often hides may remain in storage for about six months before they reach the tanner. Badly cured, handled and stored hides are known to develop what is known as 'hair-slip'. This means loosening or slipping of hair from a raw hide and is a sign of decay. Hides showing hair-slip cannot be graded high. If the hair-slip is very advanced, the hide becomes useless to the tanner and can only be made into glue.

(iv) *Transport*.—Hides often deteriorate during transit, particularly during summer, and hot, wet months. The goods wagons, in which most of the traffic is carried, are generally made of iron and get much heated up and, thereby, the quality of the hides is affected. For this reason, the wet salted hides from the North can be sent to the South safely only during the winter months of December to February. During the other months the long distance trade generally adopts dry cures.

9.2. Sorting of Hides by the Trade

The producers—*butchers* or *chamars*—all over the country sell their stocks to *beoparis* in the local market or in the village at low and flat rates. The hides then reach the commission agents in larger markets who do some sorting before selling their stock to tanners who, in turn, re-assort the hides according to their requirement of tanning.

The trade assorts the hides mainly according to four principal bases, viz., (a) region, (b) cure, (c) quality, and (d) weight. These are discussed below:

(a) *Regional classification*.—The characteristic nature of a hide depends to a great extent on the breed or the genetic type of the animal. This differs from tract to tract and so does the quality of hides in one batch of tanning as several hides at a time—even 1,000—are required. The best results are obtained when all of them are of one type. For these reasons, a system of regional classification has developed in the trade and hides from different areas are in demand in an unmixed condition.

Hides from a particular area are generally called by the name of the chief market of the tract or by the name of the district. Although there are many regional classifications, twenty-five for kips and five for buffalo hides are briefly described below. Their broad differences are discussed but to find out the actual difference in their structure and behaviour in the presence of tanning substances, a more intensive study would be required.

Kips :

- (i) *Jullundurs* : Heavy cow hides obtained in the Punjab go by this name. They are clean, big, broad and spready but generally lack substance. The lighter hides from this area also move to Calcutta where they are included under "Agras".
- (ii) *Agras* : Originally, hides pertaining to the area round about Agra, which are noted for good substance, long drawn pattern, nice trim and cleanliness and shiny appearance on the flesh side, were called "Agras". At present, hides possessing the above distinctive qualities and produced in any part of the country, particularly Northern India, are also included under this name.
- (iii) *North Westerns* : These are obtained from a very vast area extending from Allahabad to the Punjab and from the foothills in Uttar Pradesh to Madhya Pradesh. These hides have strength and shape similar to "Agras" but are somewhat flatter, thinner, not so well fleshed and their general appearance comparatively unclean.
- (iv) *Bareillys* : These pertain to the districts of Bareilly, Moradabad, Rampur, etc., and are generally of good quality.

- (v) *Pachams* : This is a term common in the Kanpur market and is applied to all hides coming from districts west of Kanpur.
- (vi) *Purabs* : Hides coming from the neighbouring Eastern areas to the Kanpur market are known by this name. The "Purabs" are generally inferior to "Pachams".
- (vii) *Banaras* : These pertain to the eastern and south-eastern parts of Uttar Pradesh. They are generally of inferior type, air-dried, less spready but are cleanly fleshed.
- (viii) *Terais* : These hides are obtained from the foot of the Himalayas including Nepal, and are generally small in size, produce compact leather but are not available in large quantities.
- (ix) *Patnas* : These belong to Western Bihar and are usually crumpled and spoilt through careless drying. Considerable quantities of flesh are found adhering to them.
- (x) *Darbhangas* : These also come from Western Bihar but are well shaped, clean and strong without warbles. Leather made from these has a distinct and characteristic grain, which is prized by manufacturers.
- (xi) *Purneas* : Comparatively superior quality cow hides from Eastern Bihar possessing excellent substance, large size, plump with clean and uncrumpled surface are known by this name. Most of them are obtained from village slaughtered animals but do not come to the general standard of slaughtered.
- (xii) *Meherpores* : Hides obtained from West Bengal. These are smaller in size, less substantial and plump but lightly plastered with salt as compared with "Daccas".
- (xiii) *Daccas* : Hides collected from East Bengal and Assam at the Dacca Market. They are available at Calcutta also. The cure is generally poor and the hides are over-plastered with salts. The size is uniform, though small, and the texture somewhat spongy.

- (xiv) *Ranchis* : These pertain to Chotanagpur area and are small, light and air-dried. The quality is medium to poor.
- (xv) *Sambhalpurs* : These are similar to "Ranchis" and pertain to parts of M.P. and Orissa.
- (xvi) *Jubbulpores* : These pertain to the Jabalpur and other adjoining districts of Madhya Pradesh. They are heavy, spready and good-textured hides.
- (xvii) *Nagpurs* : These are obtained in the central parts of Madhya Pradesh and the eastern parts of Maharashtra and are of medium weight. The quality is rather poor, both in weight and texture.
- (xviii) *Raipurs* : Light and medium quality hides obtained from Raipur and other adjacent districts of Madhya Pradesh and Orissa.
- (xix) *Ganjams* : Cow hides procurable in Orissa and the northern district of Andhra Pradesh. They are generally light and poor.
- (xx) *Nellores* : One of the best types of hides available in South India. These are quite large but many are badly branded.
- (xxi) *West Coasts* : These are obtained from the Western coastal districts of South India (particularly Kerala and Mysore States) and are small and light in weight. They are in good demand from the East India tanners for making dressed hides for export.
- (xxii) *Bangalores* : These pertain to the State of Mysore and are medium sized, well-grown hides having fairly plump substance.
- (xxiii) *Hyderabad* : These come from Hyderabad and are characterised by their square shape and good pattern.
- (xxiv) *Sholapurs* : These are considered the best hides in Maharashtra State and are good textured and substantial.
- (xxv) *Gujarats* : Hides obtained from Gujarat State. These are large, spready, and thin and are also irregular in substance. Some also have brand marks.

Bufs :

Buff-hide classifications are comparatively fewer and the more important of them are (i) North-Western, (ii) Agras, (iii) Purneas, (iv) Darbhangas, and (v) Daccas. The first named is the heaviest of the lot and is preferred for heavy harness and mechanical leather. Agras also are heavy and well finished. The rest are of the ordinary type.

(b) *Classification according to cure*.—As described in Chapter III, there are three main methods of cure for preparing hides for the market, viz., (a) wet-salted, (b) dry-salted, and (c) air-dried, and they are classified accordingly for the purpose of quality distributions.

(c) *Classification according to quality*.—The regional and cure classifications are sub-divided into assortments based on quality. These are (a) Slaughtereds, (b) Deads, (c) Rejections, (d) Double Rejections, and (e) Triple Rejections. These terms are generally represented by the letters S, D, R, D/R and T/R respectively.

The terms 'Slaughtered' and 'Dead' here refer not to the manner of death of the animal but to the intrinsic quality of the pelt. Inferior hides even from slaughtered animals may be classed among the 'Deads' or even in a lower grade, while hides from dead animals, if plump, substantial and free from blemishes, may be grouped under 'Slaughtereds'.

The 'Slaughtereds' are practically free from all visible defects and are divided into two sub-groups, viz., 'Commisariat Slaughtereds' and 'Second' or 'Ordinary Slaughtereds'. The former represents the best type of hides and, as the name indicates, are generally drawn from the cantonment slaughter houses, but good hides from the city and town slaughter houses are also included therein. These hides have, generally, minor defects and belong to well-conditioned and young animals. The 'Second' or 'Ordinary Slaughtereds' are slightly more defective and the 'Deads' still more and so on.

(d) *Classification according to weight*.—The above grades are further sorted on the basis of weight into (a) 'Lights', (b) 'Mediums' and (c) 'Heavies'. The actual weights of each class differ from tract to tract depending upon the breed of animals and the system of cure prevalent in an area. The average range of weight for the different cures is given in the following table:

TABLE 45

Average range of weight per hide in different types of cures

	Green trimmed (Lb.)	(Kg.)	Wet-salted (Lb.)	(Kg.)	Dry-salted (Lb.)	(Kg.)	Dry trimmed (Lb.)	(Kg.)	Sukits (Lb.)	(Kg.)
Kips :										
Light . .	10 to 18	4.5 to 8.2	7½ to 13½	3.4 to 6.1	5 to 9	2.3 to 4.1	3½ to 6½	1.6 to 2.9	3½ to 6½	1.7 to 3.1
Medium .	18 to 28	8.2 to 12.7	13½ to 21	6.1 to 9.5	9 to 14	4.1 to 6.4	6½ to 10	2.9 to 4.5	6½ to 10½	3.1 to 4.8
Heavy .	Above 28	Above 12.7	Above 21	Above 9.5	Above 14	Above 6.4	Above 10	Above 4.5	Above 10½	Above 4.8
Buff hides :										
Light . .	25 to 40	11.3 to 18.1	18 to 29	8.2 to 13.2	12½ to 20	5.7 to 9.1	9 to 14½	4.1 to 6.6	10 to 15½	4.5 to 7.0
Medium .	40 to 60	18.1 to 27.2	29 to 43	13.2 to 19.5	20 to 30	9.1 to 13.6	14½ to 21½	6.6 to 9.9	15½ to 23	7.1 to 10.4
Heavy .	Above 60	Above 27.2	Above 43	Above 19.5	Above 30	Above 13.6	Above 21½	Above 9.8	Above 23	Above 10.4
Cow calves :	4 to 10	1.8 to 4.5	3 to 7½	1.4 to 3.4	2 to 5	0.9 to 2.3	1½ to 3½	0.7 to 1.6	1½ to 3½	0.7 to 1.7
Buff calves :	10 to 20	4.5 to 9.1	7 to 14½	3.2 to 6.6	5 to 10	2.3 to 4.5	3½ to 7	1.6 to 3.2	4 to 7½	1.8 to 3.5

Classifications current in the different branches of the trade.—In accordance with the leather they tan, the chrome tanners, the bark tanners, the South Indian tanners and the *chamars* require hides of different types, qualities and cures. Each one of these groups has its own separate system of classifying the hides and these are briefly described below :

(i) *Chrome tanners.*—Chrome tanners generally require hides for the making of shoe uppers and, therefore, go in mainly for the superior quality wet-salted kips. Some of the Chinese chrome tanners at Calcutta go in for very inferior, mostly fallen hides for producing leather which is sold at cheaper rates for making inferior types of shoes and sandals.

Hides are also purchased in lots when tanners separate the double and triple rejections and accept the rest. Generally they classify the raw hides as 'First', 'Second', 'Third', 'Fourth', 'Rejections' and 'Double Rejections'. In the recent past, a classification known as the 'Chrome Selection', has developed in respect of this trade. The specifications are purely personal as judged by selectors at hide godowns, there being no statutory grades for this.

(ii) *Bark tanners.*—The factory scale bark tanneries at Bombay, Kanpur, Agra, Calcutta and Madras come under this class. They generally tan a variety of leather, from calf skins to heavy buffalo hides, for sale, harness or mechanical purposes. Each individual tanner has his own classification but the specifications are hardly put down on paper. Some of the tanners prefer to call the topmost grade as 'Seconds', while others start with 'Primes'. After that come the 'Rejections', 'Double Rejections', 'Triple Rejections' and 'Double Triple Rejections'. Then comes the lowest class called 'Warbled'. But, as has already been stated, the judgment of the quality depends entirely on the buyer and the specifications are not rigid or fixed. If the demand is high and supply less, 'Rejections' may be accepted as 'Seconds' and *vice versa*.

(iii) *East India tanners.*—The large number of bark tanners in the South who prepare dressed hides mainly for export, are classed as East India tanners. They draw their supplies from Calcutta, Kanpur and other up-country markets and generally clear away goods that are left behind after satisfying the demand from the chrome and factory tanners. Generally they have two classifications, the 'Superior Selection' and 'Madras' or 'Inferior Selection'. The

former is obviously better than the latter with lesser defects both on the hair and the flesh sides. No written specifications exist in this case also.

(iv) *Chamars*.—Although the trade is extensive inasmuch as the number of hides tanned by the *chamars* all over the country is quite big, there is no large scale buying or selling by or for the *chamars*. One or two hides are all that they need at a time, which they obtain locally. Generally, very poor types of hides are purchased by them. Under the circumstances there can be no fixed specifications for the hides required by the *chamars*.

9.3. Grading of Hides under AGMARK

Preliminary marketing surveys of agricultural and animal husbandry products in India indicated that apart from other defects, the practice of selling produce in mixed lots without any consideration for qualitative assortment was fairly common throughout the country. This meant a loss both to the producer and to the consumer. The former did not get benefit for this effort to turn out better quality produce and the latter was unable to conveniently secure the right quality material which he desired to obtain. The case of hides was particularly bad, as they were required in large numbers by the tanners and others, and if they could not obtain the right sort with any reliability for quality, the tanners could not be expected to pay appropriate prices.

Accordingly, the grading and marking of the produce under statutory grade standards were considered desirable and a voluntary Act known as the Agricultural Produce (Grading and Marking) Act, 1937, was enforced from the 1st of April 1937. Numerous commodities, including hides, were included under the Act. The scheme of grading and marking under the Act is generally known as the AGMARK Scheme. It is only an effort on the part of the Government to help that section of the trade which wants to market its products according to known specifications and voluntarily submits the graded produce to Government inspection at the time of packing and marking and also while it is being sold.

(1) *The AGMARK hide specifications*.—The quality specifications prescribed under the Act in respect of grading and marking the green hides are reproduced in Appendix VII. These were framed at a tanners' conference held at Kanpur in July 1936 and modified at a subsequent conference held at the same place in February 1938.

(2) *Method of grading and marking.*—At the grading stations which were located in a few slaughter houses, a suitable staff, generally comprising a grader, a *jachandar*, a recorder and a few coolies, was maintained for the purpose of grading the hides. The entire cost of the staff, as well as all other expenses connected with the scheme, was borne exclusively by the Central or State Government, as the case may be. Soon after flaying, the hides were brought to the grader. At larger slaughter houses, the grader with his staff used to go round the flaying booths and grade the hides on the spot, after they were trimmed and cleaned. Each hide was weighed for classifying it into weight groups, e.g., heavy, medium, light and calf. The grader, thereafter, examined each hide in the light of the specifications given in Appendix VII and marked them in A, B, C or Rejections grade, as the case may be.

Prior to the 1st October 1940, circular brass discs showing the grade designations, weight classifications and serial number were attached to each hide at the root of the tail by means of a wire or twine, and secured with the lead seal bearing the word 'AGMARK' on one side, and the code letters of the grading station on the other. Due to chemical reactions, however, the discs used to get blurred and coated with deposits. Thus, the task of reading the grade marks became difficult. It was also observed that at times the brass discs were detached, and sold by coolies, etc. The discs were also expensive and used to cost Rs. 15 in the pre-war time and Rs. 30 per 1,000 at the beginning of World War II. Accordingly, their use was discontinued with effect from the 1st October, 1940. Instead, a new system of indicating grade designation marks was brought into use. This consisted of punching holes of $\frac{1}{4}$ " diameter at the root of the tail. The grades A, B and C were represented respectively by 2, 3 or 4 holes. The distance between any two holes was $\frac{1}{4}$ ". These were arranged as shown in Appendix VII. A lead seal bearing the word AGMARK on one side and a letter representing one of the weight classifications, namely, H, M, L or C, as the case may be, on the other, was secured to each hide with a piece of twine or tag passed through all the holes. The place of packing was also indicated on the lead seal, in code letters. The correct size of the holes is shown in Appendix VII and it will be seen that they occupy very little of the hide surface and are right near the root of the tail.

(3) *Working of the AGMARK hide grading scheme.*—Although the Agricultural Produce (Grading and Marking)

Act came into force from the 1st April 1937, the grading of hides on an experimental basis was commenced a few months earlier in December 1936. Thanks to the co-operation of the butchers, flayers, dealers and others, the slaughter houses at Agra and Delhi were the first to give the lead. Subsequently, grading was started at the two slaughter houses at Tangra and Garden Reach in Calcutta from August and December 1937 respectively. A station at Rampur was also opened in July and another at Karachi in November 1938. Two more stations were added, viz., at Bandra (Bombay) and at Bareilly in February and December 1939, respectively. At Agra, grading was done at all the three slaughter houses. Besides the above regular grading stations, the then Governments of the United Provinces and Bengal organised peripatetic parties primarily for bringing about improvement in flaying, but these parties also were authorised to grade hides.

After running the hide grading stations for about 4 to 5 years, it was found that the trade, viz., tanners and shippers, was not at all interested in the grading of hides at the slaughter houses. Though it was accepted by all concerned that the flaying of hides was improved to a very great extent at the slaughter houses where grading was done, large buyers like tanners and shippers were not coming forward to purchase these hides on a quality basis due to the small units of graded hides available at the grading stations for sale. It was stated, that after being cured, these hides used to get practically mixed up with a large number of ungraded hides of the same cure, collected from various outstations, and it became uneconomic for the purchasers to offer prices for graded hides separately. This lack of interest on the part of consumers to purchase hides on a quality basis forced the hands of the authorities concerned to close down the hide grading stations one by one and by about 1943 a majority of the stations were closed down. The only station which worked for four years after that was Delhi, which was also closed on 21-8-1947. The peripatetic hide grading party of Bengal also continued to work till 26-6-1947 but the function of this party was mainly confined to the improvement of flaying and curing and grading used to form only a secondary part.

(a) *Total number of hides graded.*—The total number of hides graded at the different stations from 1937 to 1947 is shown in the table on the next page. The yearly progress of work at the different stations may be judged from the figures in the table.

TABLE 46
Number of hides graded at various grading stations (1937 to 1947)

Year	1	2	3	4	5	6	7	8	9	10
			Agra (U.P.)	Delhi	Tangra (Calcutta)	Garden Reach (Calcutta)	Rampur	Bandra (Bombay)	Bareilly	Peripatetic hide grad- ing party, Bengal
1937	Kips	.	11,555	17,162	23,266	..	..	..	..	..
	Bufs	.	16,484	41,676	2	..	..	..	..	..
1938	Kips	.	10,040	16,717	34,466	28,266	2,845	..	..	..
	Bufs	.	15,590	38,063	7,970	990	45	..	..	..
1939	Kips	.	10,217	15,496	32,217	22,373	6,585	43,859	211	..
	Bufs	.	14,961	26,935	12,856	811	6,591	2,912	136	..
1940	Kips	.	12,209	14,949	35,665	31,815	12,759	53,325	5,625	..
	Bufs	.	18,682	19,668	15,598	1,017	12,773	6,844	3,027	..
1941	Kips	.	13,704	13,311	..	2,639	15,388	69,857	1,739	1,792
	Bufs	.	20,247	29,531	..	87	37	6,676	6,326	47
1942	Kips	.	10,733	16,299	..	..	18,300	14,948	2,766	3,258
	Bufs	.	14,691	38,772	..	..	7	1,811	5,143	92
1943	Kips	.	2,062	10,552	..	..	20,681	..	1,755	3,752
	Bufs	.	4,105	37,190	..	..	20	..	2,197	299

1	2	3	4	5	6	7	8	9	10
1944 Kips	.	.	9,693	..	..	..	..	..	4,127
Bufs	.	..	46,551	..	..	..	..	..	149
1945 Kips	.	..	10,439	..	..	..	..	..	2,691
Bufs	.	..	48,382	..	..	..	..	..	119
1946 Kips	.	..	13,538	..	..	..	..	..	6,594
Bufs	.	..	51,557	..	..	..	..	..	112
1947 Kips	.	..	6,067	..	..	..	..	..	3,613
Bufs	.	..	22,755	..	..	..	..	..	124
Last date of grading	.	11-3-43	21-8-47	31-12-40	28-2-41	31-12-43	26-2-42	11-3-43	26-6-47

(b) *Quality of hides graded.*—The figures in the following table show the proportion of hides classified under different grades at the various stations during 1940.

TABLE 47

Percentage of hides classified under different grades (1940)

		Agra	Delhi	Tan- gra (Cal- cutta)	Garden Reach (Cal- cutta)	Ram- pur	Kar- achi	Ban- dra (Bom- bay)	Barci- lly
<i>Kips :</i>									
Total No. graded		2,209	14,949	35,665	31,815	12,759	9,161	53,325	5,625
<i>Grades :</i>									
Heavy	A	3.1	10.7	10.9	1.4	6.3	2.5	Nil	7.8
	B	6.5	17.2	11.7	1.5	22.6	8.8	1.5	18.4
	C	18.4	6.4	8.6	2.3	18.9	15.0	24.0	8.2
Medium	A	7.5	12.6	11.6	5.1	7.9	3.5	Neg.	25.9
	B	11.2	25.0	11.5	5.5	16.9	15.3	13.3	19.1
	C	22.7	7.6	11.8	8.9	13.4	15.4	24.0	7.8
Light	A	7.4	2.4	11.0	19.5	1.0	2.6	0.1	8.8
	B	6.2	4.3	12.0	25.7	1.3	7.1	10.3	2.1
	C	15.0	1.6	5.3	19.9	1.6	7.8	13.1	0.7
Rejections		0.4	5.5	1.9	10.1	7.9	10.2	11.6	0.2
Calves	A	1.0	2.5	Nil	Nil	Neg.	0.3	0.1	0.5
	B	0.3	3.2	0.1	Nil	Neg.	4.1	0.5	0.3
	C	0.3	0.8	3.6	Nil	Nil	7.4	1.5	0.2
Rejections		Nil	0.2	Nil	0.1	2.2	Nil	Nil	Nil
<i>Buff hide :</i>									
Total No. graded		18,682	25,021	15,598	1,017	14	569	6,844	3,027
<i>Grades :</i>									
Heavy	A	2.0	15.1	28.1	5.2	21.4	5.6	43.1	1.9
	B	5.6	21.1	31.0	3.7	14.3	14.8	49.7	4.6
	C	8.2	3.3	16.1	17.5	14.3	18.3	1.2	19.3
Medium	A	5.0	5.6	5.9	4.0	28.6	1.4	1.8	10.4
	B	13.0	16.4	9.2	9.6	7.1	4.4	2.9	8.6
	C	24.2	6.1	4.7	28.3	14.3	23.9	0.1	22.1
Light	A	3.1	0.9	0.1	1.2	Nil	0.7	Nil	2.9
	B	7.1	1.8	0.2	6.5	Nil	1.2	Nil	1.8
	C	9.7	0.6	0.1	10.8	Nil	6.1	Nil	1.4
Rejections		0.1	0.3	4.6	12.9	Nil	14.8	1.2	1.6
Calves	A	4.7	6.8	Nil	Nil	Nil	1.6	Nil	21.1
	B	6.8	14.2	Nil	Nil	Nil	2.6	Nil	0.7
	C	10.4	7.7	Neg.	Nil	Nil	3.7	Nil	3.3
Rejections		0.1	0.1	Neg.	0.3	Nil	0.9	Nil	0.3

The data throw some light on the quality of hides available in different parts of Northern India and may be useful to the trade in checking up their purchases from these centres. Amongst the kips, about 30 per cent of the hides falls under heavies, 38 per cent under medium, 23 per cent under lights and 3 per cent under calves. The highest percentage of heavy hides is met with at Rampur, of mediums at Bareilly and of lights at Garden Reach, Calcutta.

In the case of buff hides nearly 45 per cent falls under heavies, 32 per cent under mediums, 8 per cent under light, and 10 per cent under calves. At Bandra (Bombay) and Tangra (Calcutta) the proportion of heavies is very high, i.e., 94 per cent and 75 per cent respectively. The reason is that at these slaughter houses young she-buffaloes, imported for the production of milk, are slaughtered when they become dry, though in their prime. The proportion of calves, on the other hand, is about a fourth at the Agra, Delhi and Bareilly stations.

On the basis of quality, 23 per cent of kips comes under 'A' grade, 35 per cent under 'B' grade, 36 per cent under 'C' grade, and 6 per cent under 'Rejections'. It may be observed that only 0.2 per cent of cow hides at Bandra comes under 'A' grade, 62.6 per cent under 'C' grade and 11.6 per cent under 'Rejections'. The reason is that very little attention is paid there to the proper flaying of hides and it may be observed in general that the larger the slaughter house the less is the attention paid to the flaying of hides.

On an average, 29 per cent of buff hides falls under 'A' grade, 32 per cent under 'B' grade, 34 per cent under 'C' grade and 5 per cent under 'Rejections'. It would appear that buff hides, on the whole, receive a better handling and flaying, as they fetch better prices.

A statement showing the percentage of hides classified under different grades at Delhi just at the beginning of World War II (1940), during the middle of the War (1944) and during the post-War year (1947) is given below for comparison.

TABLE 48

Percentage of hides classified under different grades at the Hide Grading Station, Delhi

Grade	Kips			Buff hides		
	1940	1944	1947	1940	1944	1947
Total No. graded	14,949	9,693	6,067*	25,021	46,551	22,755*
Heavy . A	10.7	5.7	13.9	15.1	8.3	8.6
B	17.2	15.6	25.7	21.1	18.7	13.4
C	6.4	49.4	36.0	3.3	0.9	0.1
Medium . A	12.6	3.3	2.0	5.6	2.2	0.8
B	25.0	7.5	7.9	16.4	9.1	4.0
C	7.6	2.4	2.7	6.1	1.4	1.6
Light . A	2.4	1.3	0.3	0.9	6.4	11.5
B	4.3	2.5	1.6	1.8	9.5	16.6
C	1.6	0.1	0.1	0.6	0.6	2.1
Calves . A	2.5	3.1	2.9	6.8	12.0	16.7
B	3.2	3.5	6.4	14.2	23.3	23.4
C	0.8	0.5	0.3	7.7	7.5	1.2
Rejections .	5.7	5.1	0.2	0.4	0.1	Neg.

*Number of hides graded during the period from January to July, 1947.

(4) *Finance and costs of grading.*—The hide-grading scheme under AGMARK was initiated on an experimental basis and, in the beginning, the cost of running the stations was borne on the budget of the Agricultural Marketing Adviser. In due course, the financing of the stations was generally taken over by the respective State Governments.

In 1939-40, the cost of grading ranged between an anna and an anna and a quarter per hide. Approximately, two-thirds of this were on account of establishment and contingencies. Only about a third of the cost was due to brass discs, lead seals, etc. With the introduction of the punching method for marking the hides, the expenses on this account were considerably reduced.

(5) *Comparison of AGMARK specifications with tanners' and shippers' classifications.*—Trial consignments of graded hides were sent to tanners as well as to shippers with a view to ascertaining how far these came up to the standard required by them and also to find out how the AGMARK specifications compared with their classifications. The results of these trials are shown in the table below :

TABLE 49

Results of a trial consignment of 82 graded hides sent to a tanner at Kanpur in April 1940

	AGMARK classification		Tanners' classification	
	Grade	Number	Number	Grades
Wet-salted buff hides.	A	11	2	"Harness and Saddlery Factory Selections"
	..	..	10	"Seconds"
	B	19	19	"Double Rejection"
	..	..	7	"Triple Rejection"
	C	9	1	"Double Triple Rejection"
	Total	39	39	
Wet-salted kips.	A	9	7	"Harness and Saddlery Factory Selection."
	..	..	2	"Rejection"
	B	15	15	"Double Rejection"
	..	..	5	"Triple Rejection"
	C	9	4	"Double Triple Rejection"
	Total	33	33	
Dry-framed kips	A	4	2	"Double Rejection"
	B	4	1	"Triple Rejection"
	C	2	7	"Warbles"
	Total	10	10	

Results of a trial consignment of 36 wet-salted graded kips sent to a tannery in Madras in March 1941

AGMARK classification		Tanners' classification	
Grades	Number	Number	Grade
A	13	8	"First"
	..	..	"Seconds"
B	19	2	"First"
	..	10	"Seconds"
	..	7	"Thirds"
C	4	1	"First"
	..	3	"Thirds"
Total	36	36	

From the above examples it may generally be inferred that AGMARK grades closely corresponded with the classifications adopted by tanners. In any case, they gave a fair indication of the quality which buyers could expect in a consignment of AGMARK hides.

10. TRANSPORTATION

As cattle and buffaloes are distributed throughout the country, production of hides is widespread and scattered. However, as large tanners and assembling markets are few, hides from different areas have to be transported to them. A fair portion of the country's production thus undergoes transportation in some form or the other and only a small portion is retained for the purpose of tanning.

Individual *chamars* in rural areas have only a piece or two for sale at a time and they try to dispose of the hides within a few days of production, lest putrefaction should set in. Thus, in the early stages, hides are collected and transported only in small lots and a large number of persons are engaged in the work. Besides, this commodity is considered 'untouchable' in almost all parts of the country and, as such, is not generally transported along with other agricultural produce. Both these factors, as well as the perishable nature of the commodity, make collection and transportation of hides difficult and arduous.

10.1. Methods and Costs of Transport

Almost all the means of transport commonly used for carrying other agricultural produce are employed for transporting hides, the main forms being head-loads, *bahangis* (shoulder slings), pack animals, bullock carts, hand-carts, cycle rickshaws, tongas, motor lorries, railways, boats and steamers. The use of bicycles for transporting hides is reported to be confined only to some parts of Kerala. The use of a particular means of transport depends on the distance to be travelled, the number of hides to be carried, the facilities available for quick and safe despatch and on the expenses that have to be incurred. Even in the same tract, their prevalence may vary considerably according to local conditions. It is, therefore, difficult to estimate with any precision the percentage of hides carried by the different modes of transport in the country as a whole.

(1) *Head-loads and bahangis (shoulder slings).*—The transport of hides as head-loads is common throughout the country. Producers who have two or three hides for sale at a time carry them on their heads to the nearest

market, weekly *hat* or *shandy*. Sometimes rural collectors also transport hides in this manner. This form of transport is quite popular in the hills. Green hides from urban slaughter houses may also be removed to the purchaser's godown by this means when in small lots. In markets, bundles of hides are often carried by coolies on their backs from one shop to another or from a cart to a godown and *vice versa*.

The system of carrying hides in *bahangis* (shoulder slings) is prevalent in some parts of South India and Madhya Pradesh.

As the producers or collectors themselves carry hides it is difficult to estimate correctly the cost of transport on head-loads or on *bahangis*. Labour is seldom hired for the purpose, and, if at all, this is done only by collectors or small town merchants. On an average, the cost is estimated to vary between 12 and 25 Paise or even a little more per maund per mile depending upon the availability of labour, distance and the load to be carried. In the markets, coolies are paid according to local custom and the cost of loading and unloading and of carrying to and fro may be about six to twelve Paise per bundle.

(2) *Pack animals*.—The use of pack animals for transporting hides is common practically throughout the country. Ponies and mules play an important role in the transport of hides from Nepal, Sikkim, etc., and also in Kashmir, the Punjab, Uttar Pradesh, Madhya Pradesh, South India, etc. Camels are also used in Rajasthan, the Punjab and parts of Uttar Pradesh. Rural producers in the Punjab, Uttar Pradesh and Madhya Pradesh employ donkeys for transporting hides to weekly markets. While camels and mules carry hides over long distances also, say, 50 miles or even more, donkeys are generally used for short distance transport only.

Camels usually carry about six maunds of dry hides, mules and ponies four maunds and donkeys about two maunds. The loads are usually larger when wet-salted hides are carried because they are more compact and a larger quantity can be conveniently accommodated.

The cost of transport by pack animals is difficult to estimate accurately. Often, the animals belong to the owner of the hides and he uses them for many purposes. In areas where pack animals are hired for transporting

hides from one market to another, the rate depends on the competition amongst the owners of animals and also on the availability of alternative means. The cost of transporting hides by camels works out to about 10 Paise per maund per mile.

(3) *Country carts*.—This is one of the most ancient and widely used means of transport available in India for heavy goods. Larger lots of hides in all parts of the country are transported by this means. Depending on the tract, carts drawn by camels, bullocks and buffaloes are employed for carrying the goods over short as well as long distances. In some parts of the country, if the load is small, say, between 10 and 15 maunds, carts which are drawn by a single animal are used. Camel carts are usually drawn by a single camel and carry about 25 maunds of hides. Hand-carts pulled by men are used for transporting small loads of hides from one spot to another in a market. One or more persons are employed for drawing the cart according to the load and distance.

The cost of transport by country cart differs considerably from tract to tract and depends on local conditions. There is absolutely no uniformity in regard to these charges and they may vary widely in the same tract from time to time. At certain periods, the number of carts plying for hire may be very large and, at others, particularly during the sowing or harvest periods, these may fall down considerably. Freights decrease or increase accordingly. Besides, in this case, there is no fixed unit of charge, although the general practice is to charge by the weight of hides carried. Actual weighment is, however, never done for calculating the charge which is ordinarily settled by mutual negotiation.

An idea of the rates for transporting hides by carts in certain tracts may be had from the figures in the table below :

TABLE 50

Freight charges on hides transported by country carts

State	Rate per md. per mile
Andhra Pradesh	Rs. P. 0-03
Punjab	0-07
West Bengal.	0-06
Bihar	0-04 to 0-08

The rates refer to transport from adjoining rural areas to urban assembling centres. The charges may appear to be slightly higher, compared with charges for other commodities mainly due to the following two reasons, viz., that hides from rural areas generally being dry and not compact carts cannot be loaded to capacity and secondly the reluctance of some cart owners to load hides in their carts.

In the urban areas, the rates charged for carrying hides by country carts or those pulled by men (hand-carts) vary considerably from place to place and depend on local custom and on the distance to be traversed. They are usually much higher than the rates prevalent in rural areas.

(4) *Tongas*.—These are sometimes used for transporting raw green hides from urban slaughter houses to the godowns of local merchants. The tongas that are used for the transport of goods are of a special pattern differing from those used for passenger traffic. Whenever the loads are heavy, resort is made to the use of heavy bullock carts or *thelas*.

Hide and skin merchants generally engage these *tongas* on hire, but at times they themselves may possess a few. The charges are a little more than those for bullock carts and may vary from about 10 to 20 Paise per piece per mile as this is usually an urban transport employed for short distances only.

(5) *Motor lorries*.—Wherever good metalled roads exist, the transport of hides by lorries is popular. At larger markets, e.g., Kanpur, Calcutta, Madras, etc., this is the most popular mode of transport from the railway goods yards to the godowns of the merchants and *vice versa*. Whenever a full lorry load is to be carried between two nearby markets or between a market and a tannery, this means of transport is given preference even over railways for the following reasons :

- (i) Trouble in carrying to and from railway stations is saved. There is home delivery and home clearance service.
- (ii) Certain station expenses and likely inordinate delays are avoided.
- (iii) In most instances the time taken is much less compared with that taken by rail. This is an important factor which counts very much in the trade.

- (iv) No lining material is necessary if hides are loaded in lorries as the bodies of the lorries are generally made of wood. On the other hand, before loading hides some straw, etc., has to be put into railway wagons which are made of iron. Without such lining, hides, particularly the wet-salted, get damaged through heat and iron stains.

Transport of hides by lorries has thus become popular where distances are not very great in spite of being costlier than that by rail. Hides from Jullundur and Amritsar to Delhi and from Coimbatore and Bangalore to Madras are carried by lorry. In the States of U.P., Bihar, West Bengal, Andhra Pradesh, Jammu and Kashmir, etc., transport of hides by lorry is becoming more and more popular.

There are, however, no fixed rates charged, and these vary from tract to tract, depending on local conditions and competition from alternative means of transport. In the same tract, they may vary considerably from time to time. For longer distances the rates are cheaper than those for shorter distances. The rate for transport in hilly tracts is higher than that in the plains.

Some examples of charges for transport of hides by lorries are furnished below :

TABLE 51
Freight charges for the transport of hides by lorries

State	Calculated rate per maund per mile Rs. P.
Andhra Pradesh	0.01
Bihar	0.01
Punjab	0.01 to 0.02
West Bengal (Darjeeling)	0.12

(6) *Rail.*—In spite of the growing popularity of truck transport the railway continues to be the most important means of transport employed for carrying hides over long distances. A major portion of the inter-State trade is carried on by this means and a considerable portion of the stock is transported by rail from the up-country markets to the tanning centres.

Freight charges.—The freight rates charged on the railways fall under two categories: (i) Class rates, and (ii) Station to station rates.

(i) *Class rates.*—All commodities are grouped into classes both for 'smalls' and 'wagon-loads' in the general classification of goods and rates are fixed according to the class given to a commodity.

The 'class rate' for the different classes and different mileages are those notified in the corresponding columns in the goods rate tables published in "Goods Tariff", Part II, issued by the Indian Railway Conference Association.

(ii) *Station to station rates.*—This term indicates a special reduced rate applicable to a specific commodity booked from one specified station to another specified station. Station to station rates may be quoted from and to stations on the same railway or from a station on one railway to a station on another railway.

Hides both wet and dry come under classes 77.5-B and 70-B for smalls and wagon-loads respectively and rates can be seen in "Goods Tariff", Part II.

Conditions of consignment.—Hides are accepted by railway for carriage only if they have been stripped of all flesh and are free from any unpleasant smell. When carried in open wagons, they must be protected by tarpaulins provided by senders. Railways do not allow the use of their sheets for such traffic. Dry hides must be packed in bundles securely tied. For wet hides no packing is required when in wagon-loads but when tendered in small lots must be in bundles securely tied or securely packed in gunny or in bags.

The loading of small consignments is done by the railways themselves, but when full wagon-loads are sent, the wagon is placed at the disposal of the consignor who arranges for the loading of hides. On arrival at the destination the consignee has to arrange for the unloading of his goods. In case railway coolies are engaged, the consignor or the consignee has to pay the charges according to the schedule current on the railways concerned for such service.

(7) *Country boats.*—Boats are used for transporting hides in the river districts of West Bengal, Assam, Andhra Pradesh, backwater areas of Kerala and the lake districts of

Kashmir. These are also occasionally employed in other parts of the country where navigable rivers or canals exist. Boats employed by rural collectors carry about 10 maunds but those which are used for transporting hides between the markets often carry 300 maunds or even more. While boat transport is one of the cheapest, it is also one of the slowest.

It is reported that in West Bengal the average transport charges work out to about 10 Paise per maund per mile by boats for transporting hides from interior villages to town markets.

(8) *Steamers*.—Steamers ply on the coastal route and the navigable rivers in Bihar, West Bengal and Assam. Hides from Gauhati are carried by this means to Calcutta. The cost of transport by steamer is cheaper than that by train. It has been reported that the freight charges by steamer from Gauhati to Calcutta work out to about Rs. 3.50 per maund.

10.2. Packing for Transport

Hides are generally carried loose (unpacked) from the producers' holdings to the assembling markets. They may, at best, be tied with ropes but there is no particular system followed in regard to the number of hides in a bundle. Dry hides are generally folded from head to tail, at the spine, but wet-salted hides are folded several times and are made into small parcels.

The hides sent from one market to another or to the tanneries are usually made into bundles. The dry stock is usually packed without any wrapping. The weight of bundles differs considerably from tract to tract. Wet-salted hides are generally transported after being packed in gunnies. Two or three buff hides or four or five kips are placed one upon the other. They are then rolled into a bundle which is packed in a piece of gunny. The above packing is done in such a manner that the most inferior hide acts as a wrapper for the other hides, below the gunny bag. The weight of the package varies between one and two maunds. Sometimes, the bundle may be tied only with ropes and not packed in gunny or mats.

11. STORAGE

As hides are highly perishable and putrescent, unless special precautions are taken, storage reduces their weight, affects their quality and thereby diminishes their market value. Consequently no intermediary between the producer and the tanner ever desires to stock them for any length of time. Besides, there is also the risk of an adverse price fluctuation. In order to reduce the period of storage, attempts are always made to dispose of the stock as quickly as possible, even at a smaller margin of profit. In spite of all these, some storage becomes inevitable during the movement of hides from one agency to another, before they reach the tanneries.

The period of storage differs with each party and depends on a number of factors, such as the type of the hide, the nature and efficiency of its cure, the season and the trade demand, the tanning programme of tanneries and the availability of shipping space in the case of exporters. Superior assortments, properly cleaned and cured, stand storage better than the uncleared, fleshy and inferior goods. Dry hides keep longer than the wet-salted, and dry-arsenicated goods can, sometimes, be kept even for a year or more. On account of heat and humidity, stocks deteriorate more quickly during the summer and the monsoon months than during winter.

The trade demand is one of the most important factors affecting stocks as well as the period of storage, particularly with wholesale merchants. During slack seasons, there is little turnover but the production continues to be carried to the markets as none of the rural agencies ordinarily possesses the facilities or finances for holding the hides for any length of time when prices are unduly depressed and the merchants purchase and store them. Thus, their stocks as well as the period of storage are prolonged. During brisk periods, on the other hand, stocks as well as the time of storage are shortened.

It has been noticed that in a market which receives, say, 1,000 hides per day, the stocks with the merchants may vary from 5,000 to 25,000 pieces.

11.1. Methods of Storage

(1) *Producers*.—Dealers in the towns and cities buy outright all the green hides produced at the slaughter houses and put them to different types of cures almost immediately. Urban producers (butchers) do not, therefore, have to store hides. Village *chamars* also do not normally store their goods for any length of time as they are always in need of cash. Soon after flaying, they take the hide to the nearest village market or sell it to a *beopari* on their own holding. Sometimes, they even accept 10 to 15 per cent less than the market price in order to get rid of the piece quickly. If the village is far from any market or if a purchaser is not available there and the producer is unable to dispose of his hide in the green state, he dries it in the sun so that putrefaction may not set in. In any case, village producers do not generally retain hides for more than a week or so during winter and for a still shorter period during summer.

The stocks with rural producers seldom exceed half a dozen pieces at a time and are kept in a corner of their house or on the cross beam, under the roof. In some parts of Uttar Pradesh and Maharashtra village producers keep their stock on the branches of trees, in front of their houses.

(2) *Rural assemblies*.—*Beoparis* who go about collecting hides from village to village and who also purchase them in weekly or bi-weekly *hats* or *shandies*, send their collection to town merchants within a week or a fortnight. Meanwhile, they stock the hides in a room or verandah of their house or in an adjoining building. In Uttar Pradesh, collectors store for short periods in open huts which may be made available to them at a nominal payment to the village headman. In Madhya Pradesh collectors keep stock of dry hides to the extent of a cart-load or two, for about a month. For this, they may hire suitable godowns, if necessary. In parts of this State, where no roads exist, collectors are known to keep during rains stock of dry hides in thatched houses for nearly three months.

(3) *Town merchants*.—Village *beoparis* bring or send their stock to the town merchants. Hides from the local slaughter houses also pass on to them. These merchants have their own godowns which are generally located in the outskirts of the town where rent is cheap.

In Mysore State, the storing of hides near residential quarters is not permitted and hide merchants have to possess licences.

The godowns of the town merchants usually have a curing yard attached, where the local hides, as well as those obtained from villages, are cleaned and cured. In many cases, only open storage yards are provided. In such cases, hides become subject to damage by vultures and stray dogs.

Town merchants dispose of their stocks to wholesale merchants in larger markets. They do not generally keep the dry hides for more than a month and the wet ones for more than 8 to 10 days. Their usual stock is about 500 pieces but in many places it may be much smaller.

(4) *Wholesale merchants and exporters.*—As already discussed under “Assembling and Distribution”, most of the hides from the districts are passed on to wholesale merchants at cities and ports. Naturally, these merchants have large godowns and establishments for storing hides. It is here that hides are kept for sufficiently long periods—extending from a fortnight to a few months or even a year, depending on the circumstances. The godowns are generally *pucca* and have large verandahs. It has also been noticed that they are generally located in one part of the town. Differently cured hides are kept in separate lots. The superior assortments of each type and cure are sorted and stocked separately. Sometimes planks or bamboo matings may be spread underneath the hides to protect them against dampness. The hides are piled up in heaps which are not made very high as the chances of heating and fermenting are greater in high heaps. An experienced staff is maintained for looking after the stock. The piles of wet-salted hides are turned once a week during winter and twice during summer and the monsoon. More salt is also applied, if necessary. Piles of dry and semi-dry hides are also frequently turned and examined. Each dealer's lot is separately stacked until it is sold.

The stocks carried by wholesale merchants vary considerably from time to time, depending on supply and demand. They often carry stocks up to 5,000 pieces or more.

11.2. Costs of Storage

The village producer does not incur any expense on storing the few hides which he keeps in his own dwelling house. The hides are also generally disposed of in a very short time which thus eliminates the need for elaborate storage. The rural collectors or *beoparis* have, however, sometimes to rent houses in villages for this purpose. As storage charges are not separately calculated by *beoparis* and as they form part of other operations like treating the hides with salt, packing, loading, etc., the exact charges for storing are difficult to assess. In Madras it is stated that the storage charges work out to about six Paise per pound. In West Bengal it is reported to vary from Rs. 1.50 to Rs. 2.50 per piece according to the period of storage which cost also includes the cost of treating hides with salt. In Bihar it is reported that the cost of storage, washing, salting and labour charges range from Rs. 1.25 to Rs. 1.75 per buff hide per month and from 62 Paise to 87 Paise per cow hide per month. In Bombay city it is reported that the cost of storage of 1,000 hides for a month is Rs. 50 in a godown with floor area of 30×20 feet.



नमो भगवते वासुदेवाय

12. STATE AND THE LEATHER INDUSTRY

The leather industry has received governmental assistance and attention in a greater measure since the implementation of the development plans. The industry was accorded a special treatment due to the following:

- (a) Its good performance in the export field ;
- (b) The predominance of small and cottage-scale units of production and Government's policy of encouraging them ;
- (c) The importance of the industry in the defence of the country (supply of suitable winter boots, etc., for the army).

Till India gained Independence, the export of raw hides and skins was allowed freely and no restriction was imposed on the imports of leather manufactures. The nascent footwear industry in the thirties struggled hard to compete with the imported Japanese Western type shoes. The Second World War greatly helped the indigenous producers by stoppage of imports and expanded export markets.

12.1. Policies

The policies pursued by the Government in the post-Independence era were aimed at two main objectives :

- (a) Promotion of internal production ; and
- (b) Increased export of finished leathers, footwear and leather goods.

As a protective measure to help the infant Indian industries, heavy import duties were imposed on manufactured leather products even to the extent of 100 per cent *ad valorem*. The export of goat skins was restricted by quota system, whereas exports of raw hides and sheep skins were virtually banned. A Special Export Promotion Scheme was introduced and this helped the exporters to increase their production by utilising the import entitlements. In the bilateral trade agreements, leather and leather footwear were included by the Government of India

in many cases. These were the broad general measures undertaken by the Government. Some of the specific measures worth mentioning include: according priority in the rail movement concessions in sales tax, freight charges; provision of storage facilities for leather and leather goods in State and Central Warehouses; the notification of the tanning industry as an essential industry; and levying of excise duty at 10 per cent *ad valorem* on the footwear produced by bigger units so as to give a price advantage to small and cottage sectors. Similarly, credit facilities and other measures to improve the stability and cushioning factors have helped the industry.

12.2. Institutional Arrangements

Though there was an official unit under the Development Wing for a long time to look after the industry, the first attempt to get the views of the various leather interests found expression in the formation of a panel for the leather goods industry in December 1958. The panel developed into a Development Council for leather and leather goods. The various institutional and other arrangements made so far by the State for the development of the leather industry are further classified into those that are exclusively meant for the development of the leather industry and those having leather and allied industries as one of the items in their programme.

12.3. Arrangements exclusively for Leather Industry

(a) *Leather development councils.*—The Leather Development Councils, both the first one and the reconstituted one, have studied the various problems connected with the industry, such as shortage of raw materials both in quantum and quality, prevalence of idle capacities in the existing units, the areas where modernisation is urgently required, the need for the formulation of suitable import and export policies, and the proper marketing and distribution arrangements required in India and abroad. The Councils helped a good deal in developing an understanding of the problems of the industry in a proper perspective and the various reports of the sub-committees served as an addition to the inadequate details available about the industry which helped in the planning and formation of policies in this sphere.

(b) The Leather Export Promotion Council at Madras was established in 1956 and its main functions are to advise the Government, local authorities, and public bodies regarding the measures in operation that require improvement and the new measures necessary for export promotion. The Council arranges for market surveys abroad through export agencies, sends trade delegations to make on-the-spot studies of the foreign markets and participates in the renowned World Fairs. In 1958, the Leather Export Promotion Council had evolved a voluntary Quality Control Scheme for East India tanned leathers.

(c) The Leather Export Promotion Council for finished leather, leather manufactures and leather goods including footwear was started at Kanpur at the end of 1963. The Council had participated in the recent Paris Leather Fair. The Council has a vast field to cover in the promotion of finished leather and leather goods exports.

The Sports Goods Export Promotion Council—which attends to the problems of all sports goods exports—also covers leather sports goods like football, cricket ball, and other sports goods.

(d) *Research and Training Centres.*—Recognising the imperative need for modern technical know-how and trained personnel, the Government of India has set up a number of organisations like the Central Leather Research Institute, Regional Training Institutes, etc. This subject will be dealt with separately. Similarly training centres in flaying are run by the Ministry of Food and Agriculture, Khadi and Village Industries Commission, Veterinary Colleges, etc.

12.4. Agencies that cover Leather as a Part of their Programmes

(a) *Khadi and Village Industries Commission.*—This Commission is vested with planning, organisation, and programming for the development of a number of village industries including leather. It has been doing yeoman work for rehabilitation and reconstruction of village leather industry which accounts for the production of about 50 to 60 per cent of leather and leather goods. The main features of this scheme are :

- (i) setting up of flaying and carcass recovery centres ;
- (ii) establishment of village model tanneries ;

- (iii) running of training-cum-production centres ;
- (iv) organisation of tanning co-operatives ;
- (v) maintenance of marketing depots.

At the end of 1961-62, 243 tanning centres, 199 tanneries, and 47 marketing depots were working under the control of the Commission.

(b) *The Central Small Industries Organisation (CSIO).*—The Small Industries Service Institutes (SISI) are set up in each State under this organisation to disseminate technical knowhow and make available servicing facilities, hire purchase credits for machinery, consultative services by running some model centres, etc. This department also arranges for training of technicians, organises refresher courses for industrial and management personnel, conducts techno-economic surveys on the tanning, footwear and leather goods industries at all-India and regional levels.

The C.S.I.O. has also set up the Central Footwear Training Centre at Madras and the Precision Shoe Last Factory at Agra to assist the footwear industry.

The Small Industries Extension Training Institute (SIET) is another organisation under the CSIO which trains both the officers of the Government and managers of the industry in extension techniques—application of the appropriate technology to the small-scale industry.

(c) *The National Small Industries Corporation.*—This Corporation has been helping in the modernisation of units by supplying imported and locally available machines on hire-purchase system to the small-scale sector. The Export Cell of this Organisation, it is reported, has so far arranged for the export of footwear made by the small-scale sector, valued at Rs. 4 crores. Now the State Trading Corporation has taken up this work.

(d) *State Trading Corporation.*—This organisation has also recently come into the picture particularly in regard to the imports/exports connected with the East European countries.

(e) *State Governments.*—Almost all the State Governments had enacted legislations like the 'State Aid to Industries' Acts even prior to the thirties. These Acts provide for the supply of loans and subsidies to the development of

small and big industries. The rate of interest generally ranges between three and five per cent and the loans can be repaid in easy instalments spread over a longer period. The details of the impact of these types of assistance under this head have yet to be obtained in respect of the leather industry.

The responsibility for the development of the small-scale and cottage industries is vested with the State Governments. Accordingly, some State Governments have established Industrial Estates, and the leather and leather goods industries also figure in such States. The Madras Government have recently established an Industrial Estate exclusively for the leather goods industry. The Pilot Project for the footwear production at Agra under the U.P. Government is another example of the useful role played by the State Governments in this respect.

The State Governments have also one or more of the following agencies which look after the development of the leather industry :

- (i) Leather Experts,
- (ii) Advisory Committees,
- (iii) Leather Boards,
- (iv) State Khadi & Village Industries Boards.

(f) Other agencies like the State Bank of India and State Industrial Finance Corporations do provide financial assistance to the organised sector of the industry. A few other organisations and departments like the Community Development Department, the Tribal Welfare Department, the Harijan Welfare Board, the Central Social Welfare Board, the Handicrafts Board, the Akhil Bharat Sarva Sewa Sangh, the Ministry of Food & Agriculture and the Kasturba Seva Mandir are partly connected with the development of the leather industry. Their exact role and contribution have yet to be assessed.

(g) The Director General of Supplies and Disposals purchases a considerable quantity of leather products for the use of the different States. As per the Directory of Indian Leather Technologists' Association (1960-61) the purchases made by the above office exceed rupees one crore per annum.

The above account goes to show that the Government is not only fully alive to the needs of the industry but has assisted it in many ways.

Whether so many different agencies of the Government are necessary, whether they are complementary to each other and their work fully co-ordinated, whether it is possible to take quick decisions in such a set-up and whether the industry is tossed like a shuttle-cock between decisions or indecisions of the various agencies, whether the assistance offered by various agencies is reaching the proper quarters and whether the industry is taking full advantage of these facilities, however, are yet to be assessed. Such a critical assessment will help formulate better plans and programmes to serve the industry better. But it has to be acknowledged that the industry has been benefited to a great extent by the above agencies.

12.5. Research, Innovation and Development, and Technical Training

A good parameter for progress is to determine the readiness with which the industry absorbs the latest technical knowhow to produce goods of better quality, and has higher yields with lower costs to increase the efficiency and the tempo of development. Any development programme or progress is thus closely linked with research and utilization of research.

Recognizing that research and progress are synonymous and taking note of the absence of large-scale industrial combines to finance research and training institutions, the Government of India have established a number of Institutes concerned with the industry. Their activities are summarised below:

(1) *The Central Leather Research Institute, Madras (C.L.R.I.)*.—This is one in the chain of National Laboratories under the aegis of the Council of Scientific and Industrial Research. Its objects are:

- (a) To conduct fundamental and applied research ;
- (b) To develop technical knowhow and knowwhy ;
- (c) To disseminate the knowhow to the industry ; and
- (d) To train technical personnel.

This Institute attempts to keep in close touch with the industry and its problems through its extension activities and also with other organisations connected with the industry both in India and abroad. It also trains personnel at the managerial research level with the co-operation of the University of Madras. A number of foreign countries are also taking advantage of the research and training facilities available at the C.L.R.I. The C.S.I.R. also offers fellowships, research schemes, etc., in the University Research Departments for fundamental research in the field of leather.

(2) *Training.*—The Institutes at Jullundur, Gwalior, Kanpur, Agra, Bombay and Madras impart training only at the foreman level offering diploma and certificate courses in leather and leather goods manufacture.

(3) *The College of Leather Technology, Calcutta.*—Apart from the C.L.R.I., this is the only college that offers a degree course in leather technology.

(4) Practical training facilities in leather manufacture are offered by the S.I.S. Institutes and the C.L.R.I.

(5) *The Central Footwear Training Centre, Madras (C.F.T.C.).*—This centre under the C.S.I.O. offers courses at the foreman and managerial levels.

(6) *Training in flaying and tanning.*—Facilities for this are provided by the following agencies:

1. The Ministry of Food & Agriculture, Government of India, runs the F.A.O. centre at Bakshi-ka-talab, Lucknow, U.P., and it will soon set up another such centre at Vijayawada, Andhra Pradesh.
2. Goseva Charnalaya, Nalwadi (Wardha), Kora Kendra, Borivli, Akhil Bharat Sarva Seva Sangh and many other small centres run by the Khadi Commission.
3. Veterinary Colleges—all these offer training in flaying and carcass utilisation and some also offer training in tanning and making of leather goods and footwear.
4. Community Development centres, the Social Welfare Board and the Handicrafts Board also offer training in leather and leather goods for short periods.

5. Leather-craft training is also offered in art schools and basic training schools.

This account should give a fair indication that the industry is being well served with research, technical knowhow and technical personnel. At least, the facilities are made fully available. What is more important, however, is how far the industry is able to absorb the men and the knowledge. It is this—the rate and quantum of absorption of technical men and technical knowhow—that determines the progress of the industry. This needs a thorough assessment. But it can be definitely stated that the age-old industry is awakened to the need of science and technology and greater use is being made of research and trained personnel in the recent years.



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SUMMARY AND RECOMMENDATIONS

1. Supply

In the trade, the larger and thicker pelts of cows, bullocks, buffaloes, horses, camels, etc., are called hides, while the smaller and lighter ones of calves, sheep, goats, etc., are termed skins. The approximate production of raw hides in India is 2.33 crore pieces of which 14.4 lakh pieces are obtained from slaughtered stock and 2.19 crore pieces from fallen animals. Of the total, 1.74 crore pieces are kips and the rest buffalo hides.

The relative importance of different States in the production of cow hides and buffs may be seen in the following table:

TABLE 52
Production of cow hides and buffaloes

Name of State	Cow hides	Buff hides
(Percentage to total)		
Uttar Pradesh	12.6	24.1
Madhya Pradesh	12.3	8.1
Bihar	9.5	9.3
Maharashtra	8.2	5.0
West Bengal	7.6	2.3
Rajasthan	7.6	7.0
Andhra Pradesh	7.4	15.0
Madras	6.7	5.5
Orissa	6.4	2.3
Mysore	5.7	4.3
Punjab	4.4	9.3
Assam	3.9	1.0
Gujarat	3.5	4.3
Kerala	1.9	0.7
Other	2.3	1.8
TOTAL	100.0	100.0

The main factors that affect production of kips and buffalo hides are the livestock population, mortality rate, number slaughtered; effect of famines, floods, epidemics, etc.

India being a surplus producing area, it is only natural that her imports of hides and leather are comparatively small. The total imports of raw hides and leather into India during 1964-65 were of the order of 22.3 lakh pieces valued at a little over Rs. 2 crores.

The first attempts to export Indian hides were made by the Dutch over 300 years ago. Before World War II India's exports of hides were enviable, both in quality and quantity. The export of buffalo hides, buffalo calf skins, cow hides and cow calf skins is not allowed. The exports of hides and leather from India during the year 1964-65 amounted to 10,864 tonnes valued at about Rs. 7.7 crores.

Recommendations

With the progressive implementation of the ban on cattle slaughter, the tanning industry to-day depends mostly on the hides produced from fallen animals. The quality of hides arriving in the market has deteriorated a great deal as fallen hides are definitely inferior to those obtained from slaughtered animals. Some of the major defects in the hides arriving in the markets are flay cuts, brand, goad and yoke marks, scratches, punctures, warble holes, tick and pock marks besides defects due to old age and emaciated condition. Unless the standard of quality of raw hides is improved considerably, it would not be possible to produce good quality leather for finished goods of a better class. To improve the quantity and quality of raw hides it is recommended that :

(1) The total rehabilitation of all the useless and diseased cattle in Gosadans being a practical impossibility, all such cattle which are over a certain age and are unfit for milk, breeding or work should be allowed to be slaughtered. Such a measure on the part of the Government would result in :

- (a) the prevention or minimisation of wastage and deterioration of hides as all the hides would be collected soon after slaughter ;
- (b) checking illegal slaughter which is at present practised in some States resulting in bad flaying as this is done in darkness and in haste ;

- (c) the flaying of all carcasses, some of which at present go abandoned for fear of suspicion of slaughter in States where there is a complete ban on cattle slaughter ;
- (d) checking the practice of driving animals across the State borders for slaughter and re-transporting the meat ; for example, there is a total ban on cattle slaughter in Mysore State but for meeting the local demand for beef in Bangalore, cattle of Mysore State are driven to the bordering areas of Madras State, slaughtered there and the beef brought to Bangalore for sale ;
- (e) making available a considerable amount of meat, endocrine glands and other products which are at present wasted.

(2) Legislation should be enacted in all the States enabling panchayats and local bodies (as the case may be) to let out the right of collection of carcasses by public auction to a contractor after paying due compensation (to be fixed every year) to the owner.

(3) A proper flaying location and a bullock cart for transporting carcasses to the flaying centre should be provided by every village panchayat/local body.

(4) No owner of any animal should be allowed to bury carcasses without the prior permission of the local Revenue Officer. All such carcasses should be handed over to the panchayat or the duly appointed contractor, as the case may be, and it should be obligatory on the part of the contractor to employ only trained and licensed flayers.

2. Utilisation and Demand

The total estimated supply of raw hides in India is about 2.43 crore pieces (Indian production 2.28 crore pieces plus import (1964-65) of raw hides 14.5 lakh pieces). Of this, about 40 lakh pieces were exported as tanned or dressed hides and as unwrought leather. The remaining hides were consumed by small- and large-scale tanneries for preparing leather suitable for different types of articles used

in the country. The quantities of leather used for different purposes is estimated as under:

Articles	Number of pieces used annually (lakh)	Percentage to total
1. Country pattern shoes including chappals	94.57	45
2. Western style shoes	33.63	16
3. <i>Moth, charasa</i> or <i>kosa</i> for drawing water from wells	25.22	12
4. Leather straps and other articles of agricultural or industrial use	21.02	10
5. Suit-cases, bags, harness and saddlery and leather for repairs	25.22	12
6. Ropes, etc., made from raw hides	10.51	5
TOTAL	210.17	100

The industrial demand for raw hides may broadly be classified into internal, domestic and overseas. Now that the export of kips, buffalo hides, cow calf skins and buff calf skins is totally banned, there is no export of raw hides or kips.

The industrial demand for raw hides can be summarised as under:

Industry or trade	Number in lakh	Percentage to total
1. Village artisans for making ropes, etc., without tanning	10.21	4.2
2. Village tanneries for indigenous tanning	94.80	39.0
3. Village and larger tanneries for making dressed hides	96.25	39.6
4. Small-scale tanneries engaged in producing chrome leather	14.34	5.9
5. Modern tanneries for making fully finished leather	27.47	11.3
Total (22.86 million pieces of Indian production + 1.28 million pieces of raw hides imported)	243.07	100.0

Bark-tanned hides, produced by the village tanners in the indigenous way, are very inferior to those turned out by organised tanneries. They are generally used for making country shoes, leather buckets and other goods where fineness and finish are of little importance. Poorer hides with warbles, tick marks, brand marks, etc., are retained by the *chamars* and tanned in the villages. This cottage industry thus consumes a considerable proportion of the inferior quality of hides produced. It is essential to improve not only the quality of hides retained in the villages, but also the method of tanning prevalent there.

The preparation of half-tanned hides, both for export and home use, is a speciality of the South, particularly Madras State. Mostly kips are required for this industry and the bulk of the production is exported to the United Kingdom where it is finished into good quality, bark-tanned, general purpose leather. These are also tanned with bark and the tanning extract of vegetable origin but the tanning is much superior to the ordinary village tanning and the material produced is soft and pliable.

The modern and large-scale tanneries in India require both kips and buff hides for chrome and bark tanning respectively. They produce high class leather, comparable in quality with imported leather. The industry is most developed at Kanpur, Calcutta and Madras.

Recommendations

1. In view of the fact that there is a great shortage of raw hides of good quality and as a major portion of the raw hides comes from fallen stock, it is recommended that the Khadi and Village Industries Commission, other allied organisations and the State Governments should concentrate their attention on the establishment of flaying centres all over the country with a view to :

- (a) effecting greater collection of raw hides ;
- (b) improving quality by better and proper flaying and curing ; and
- (c) utilising all the other remains of carcasses that are at present allowed to go waste.

2. Peripatetic demonstration parties consisting of expert curers, tanners and skilled technicians should be organised to train the village artisans not only in the proper

curing and tanning but also in the rational use of hides. These parties should impart practical training to the indigenous producers and tanners on modern techniques, as of late there has been an increase in the number of village tanneries with a consequent rise in village tanning.

3. Preparation for the Market

The hide—whether from a dead or a slaughtered animal—is highly perishable and starts decaying within an hour or two of the animal's death. Proper preparation (flaying and curing) is, therefore, of paramount importance.

In advanced countries, mechanical flaying machines, wooden hammers, etc., are employed in the operation. In India, only knives are used requiring great skill and patience. Hasty flaying, flaying by inexperienced flayers, the absence of hoisting arrangements, ill-lit slaughter houses, etc., are responsible for causing many cuts and flay marks on hides. In the case of fallen hides, the *chamars* generally leave, besides the usual knife marks, too much flesh and tissues adhering to the pelt, which render preservation ineffective and the hides "give way" in patches during the liming process at the tannery.

Payment of suitable premium to the flayers for properly flayed hides has proved effective in reducing the number of flay cuts.

The next step in the preparation for the market is the curing of hides. Unless a hide is properly preserved, decay sets in within a very few hours of death or slaughter. Therefore, all hides, with the exception of those which can be tanned soon after flaying, have to be cured and the process of curing constitutes the most important item in the preparation for the market. The types of cure adopted are: (i) wet-salting, (ii) dry-salting, (iii) dry framing, and (iv) air drying in unframed condition. Tanners prefer the first as it leaves the hide pliable and moist, and makes tanning easy and effective.

Common salt has so far been the best and the cheapest material for use in curing hides. It should be pure and clean to get the best results from curing.

As the production of slaughtered hides is on the decline owing to restrictions on cattle slaughter, India will have to depend largely on fallen hides for her requirements.

Fallen hides are inferior in quality to those obtained from slaughtered stock. Apart from this intrinsic inferiority of dead hides, the defective methods of flaying dead animals and the method of curing followed in villages result in further deterioration of the quality of fallen hides. Tanners, therefore, find it more and more difficult to produce a satisfactory quality of leather for making good quality shoes, upholstery, suit-cases, etc. Steps are thus necessary for improving the quality of hides obtained from dead animals.

Recommendations

(1) Improved methods of flaying, *e.g.*, use of flaying machines, should be introduced at the larger slaughter houses, on an experimental basis, in the first instance. In such experimental schemes, proper data should be maintained during the experimental stage, regarding comparative costs and benefits accruing from improved methods. The State Marketing Officers should, after proper investigations and consultation with the butchers, hide merchants and slaughter house authorities, prepare schemes for submission to those concerned.

(2) A certain sum should be set apart by each State Government to encourage, amongst other things, better flaying by payment of premia to good slaughter house flayers.

(3) The State Animal Husbandry Departments should encourage the Veterinary Assistant Surgeons to pay greater attention to the hide improvement work, as a part of their normal duties.

(4) Although the practice of branding animals with the aid of a hot iron is less prevalent in many States, the practice is not totally discontinued. On the other hand, it is still prevalent in some States. It is, therefore, recommended that all State Governments be requested to prohibit this practice by law.

(5) The need for the erection of cold storage for preserving hides is of paramount importance in the light of a rapid decline in the availability of quality hides. It is recommended that, to start with, four or five cold storages at important centres be provided under various Foreign Aid Programmes and located in U.P., Maharashtra and Madras on an experimental basis. Private parties or trade interests coming forward to put up such warehouses on

their own initiative may also be given liberal aid in the form of grants and/or loans.

4. Prices

The prices of raw hides depend, in addition to supply and demand conditions, on a large number of factors, viz., type, quality, size, weight, cure, season of production, district of origin, conditions in overseas markets, etc. There is no standardised system of quoting prices and in the early stages of marketing, buyers usually make their offers per piece or per lot after examining the pelts. At the large assembling centres the basis of quotation varies from tract to tract and prices may be quoted per standard or local maund, per hide, per score, annas per lb., pounds per rupee, etc. These diversities often make comparisons of prices difficult at different markets even for the same type of goods.

On account of their superior quality, slaughtered hides sell at a premium. As the outturn of leather is proportional to the hide substance, prices vary a great deal according to the cure or the proportion of moisture left in the cured hide. The leather charges incurred and the salt used in curing also influence the price per maund.

Price also depends on the thickness or weight per square foot of the hide in its raw condition. The influence of weight on the prices of kips and buff hides is, however, quite different. The lighter the kip, the higher is the price because, in this case, the finished leather is sold per square foot. In the case of buff hides, heavier pelts fetch more because they produce stouter leather which is sold per pound.

Of all factors, quality, i.e., the absence or presence of defects in the hide, is of great importance in determining prices. A study of the prices of different grades of Agmark hides shows that, compared with the best 'A' quality hides, the 'B', 'C' and 'Rejection' grades of kips fetched about 83, 65 and 41 per cent of the price respectively, and buffs 82, 62 and 47 per cent of the price respectively.

The size of the animals which varies in different parts of the country is reflected in the shape, dimension or the pattern of the hide. Accordingly, a regional distinction has developed which also influences prices. Hides from large and heavy cows and buffaloes of the North and West

sell at higher prices than those from the stunted animals of the East and the South.

The quality of hides and, consequently, their prices are also affected by the season of their production. From October to March, grazing is plentiful and the animals are in a better state of health than in the summer season. The quality and thickness of the hide substance consequently improve and winter hides sell at a premium over the summer or the monsoon ones. Besides, the trade demand also increases during that part of the year and prices go up. Similar variations are observed in the case of buff hides.

The prices paid by the different classes of buyers, viz., shippers, factory tanners, E.I. tanners, etc., are determined after taking into account the above factors. The various buyers, however, buy according to their own classifications and notions of quality standards, and there is a good deal of difference in the prices paid by each one of them.

Although modern trade conditions require that producers, dealers and manufacturers should always be in possession of reliable information on stocks, arrivals and prices of a commodity at important markets, both local and foreign, a proper price and market intelligence service has yet to be developed in the hide trade in India. At present all important buyers and sellers have perforce to make private arrangements for getting certain basic information. Correct information seldom filters down to the countryside, with the result that butchers and, more so, the village *chamars* rarely benefit by a rise in prices in the terminal market. An organised Market News Service at the terminal markets and dissemination of information to smaller markets and the countryside is, therefore, very necessary for the hide trade as a whole.

Recommendations

(1) A suitable central organisation should collect reliable information on daily prices and stocks at the important inland and port markets as well as on foreign trade tendencies. As the London prices of 'Half-tanned hides' have a bearing on the prices paid for up-country hides by the East-India tanners, regular collection and review of these prices are important. The information should be published in the form of a bulletin and should also be released to the Press and to the All India Radio.

(2) The District authorities should arrange to obtain the above information and display it at such *hats* in their areas where a larger number of hides are collected or sold. The State Marketing Officers should advise the District authorities in this matter and indicate the names of suitable *hats* where the information may be displayed or announced through the beat of drum, together with the specific type of information which would be most useful to the sellers in the countryside.

5. Assembling and Distribution

The problems of assembling and distribution which confront the hide trade are, in general, similar to those prevailing in the case of other agricultural commodities. The perishable nature of hides and the religious scruples of people in regard to their handling, etc., however, are the only special features. Production in the countryside is not only scattered and on a small scale, but also casual and irregular. The extreme poverty and backward condition of the *chamars* prevent them from accumulating any stocks. Thus, the assembling of hides has to be done on a wide-spread but piecemeal basis, much to the disadvantage of the producers. Conditions are a little better as far as the urban slaughtered stock is concerned.

The main agencies engaged in the trade are the producers (both *chamars* and butchers), the village *beoparis*, the town dealers and the commission agents. *Chamars* and butchers sell for cash their collection to the indigenous tanners, the village *beoparis*, the town dealers and, occasionally, to the commission agent. Village *beoparis* purchase hides outright from *chamars* and rural butchers and sell them to the town dealers or the commission agents. In the villages they distribute hides to local tanners and, at times, work on commission for purchasing hides on behalf of wholesale merchants. Town dealers buy from village *beoparis* and others and sell through commission agents in the wholesale markets. They also sell direct to factory tanners. Commission agents grade and assort the hides received from town dealers and others and sell them to factory and E.I. tanners, without marking them. At times they purchase hides on their own account and dispose them of to the usual buyers. They invest large capital, have ample warehousing facilities, possess business acumen and foresight and act as large-scale distributors.

Separate markets for the sale of hides do not exist. In the rural areas, most of the hides are sold by producers ex-holding or delivered at the godowns of the village *beoparis* and the tanning yards of the rural tanners. The remainder are sold in the weekly *hats* and *shandies* where a corner of the market place is generally reserved for the sale and purchase of hides and leather goods. For slaughtered hides, the urban slaughter houses themselves constitute the market place. Where the system of purchasing on the back of the animal is in vogue, the buyers arrange to take delivery of the hides at the slaughter houses.

In the rural areas, sales are effected through direct negotiation. The *chamars* are generally ignorant of current market rates and tendencies and purchasers take full advantage of this. At the slaughter houses, the butchers collect the hides for the examination of buyers who whisper their bids to the former, one by one, and the lot is sold to the highest bidder. In many places, hides are sold on the back of the animal before slaughter and the prices are settled in advance either in *sotto voce* or by bidding aloud. In some parts, particularly in the South, butchers take advances from merchants on the condition that they would sell the hides to the latter at some pre-settled rates. In large markets it is usual for the commission agents to sort the goods of their clients and put them to auction in lots. The bids may be either secret or open and, at times, the sales may be effected through direct negotiations.

Producers have to spend very little by way of market charges. In case they take the hides to a weekly market, they have to pay ten to twenty Paise to the market lessee. The village *beoparis*, while selling in rural markets, have also to pay the usual market fee.

In the larger markets, the merchandising charges amount to 6 to 10 per cent on the value of goods. There is, however, no uniform basis of levying the charges. They may be per piece, per score, by weight or on an *ad valorem* basis. In the same market, the charges differ from merchant to merchant and according to the type of goods, kip or buff. Sometimes, the charges vary with each transaction. The most important charge is the commission which varies from two to six per cent in different markets. Other items are clearing and cartage charges, municipal charges, charity, rebates, allowances and other miscellaneous charges.

Chamars do not ordinarily need any finance as they receive the pelts generally free of any cost. In the South, the village *beoparis* are known to give them small loans with a view to securing their collection at slightly lower rates. Butchers generally work with their own capital but at the same time they take loans from merchants for the purchase of slaughter stock.

The village *beoparis*, town dealers and wholesale merchants, all work with their own resources. In times of need, however, the village *beoparis* may borrow from *sahukars* or from the hide merchant. In the latter case, no interest is charged avowedly but corresponding adjustment is made in the price. Wholesale merchants, on the other hand, draw on banks against the security of stock. In the case of outstation sales, realisations are made through banks or by demand drafts drawn by foreign buyers.

6. Quality and Grading

The quality of hides depends on a number of factors which are both varied and complex. The breed, the sex of the animal, the tract to which it belonged, the manner in which it had been maintained, the diseases it had suffered from, the part of the year and its condition at the time of death or slaughter, and the way the hide had been flayed, cured, stored, transported and handled, all go to make the quality of the hide as well as the leather made from it. While making purchases, buyers look to (a) size and pattern, (b) substance, thickness and weight, (c) biological defects such as warble holes, tick marks, pock and other marks, etc., and (d) mechanical defects on the hair and flesh sides, such as flay-cuts, brand, goad and yoke marks, scratches and punctures, etc. Larger, thicker, well cured hides from comparatively young animals and free from blemishes are, as a rule, prized by the trade. The methods of storage and transport also affect the quality of hides.

Sorting of hides is generally not practised until they reach the large-scale assembling centres where the commission agents assort them before sale. The principal basis of grading recognised in the trade are (a) region, (b) cure, (c) quality, and (d) weight. As already stated, the quality of hides depends to a great extent on the breed of the cattle which differs from tract to tract. Thus, hides from each

tract possess some special characteristics and are classified under one group. There are numerous such classifications, and hides from different tracts are called by the name of the chief market or of the tract or district, *e.g.*, *Jullundurs*, *Agras*, *Patnas*, etc.

According to cures, hides are divided into three main groups, *viz.*, (i) wet-salted, (ii) dry-salted, and (iii) air-dried. Under the first two, there may be heavy, medium and lightly cured hides according to the quantity of salt used.

The regional and cure classifications are further subdivided into assortments based on other quality factors. These are Slaughtereds, Deads, Rejections, Double Rejections, and Triple Rejections. The terms Slaughtereds and Deads refer not to the manner of the death of the animal but the intrinsic quality of the pelt; slaughtereds are practically free from all visible defects and the deads possess more defects and so on. The above grades are further sorted on the basis of weight into (i) lights, (ii) mediums and (iii) heavies. The actual weights of each class differ from tract to tract, depending on the breed of animals, the system of cure prevalent in the area and the classification adopted by different merchants, tanners, etc. The chrome, bark or E.I. tanners employ their own classifications which are generally unspecified and unknown to the general public. The only written and statutory specifications are the AGMARK grades which were introduced in April 1937 as an outcome of marketing survey. On the recommendations of the Indian Tanners' Conference, they were tried, on an experimental basis, at the slaughter houses at Agra, Delhi, Tangra, Garden Reach (Calcutta), Rampur, Karachi, Bombay and Bareilly for some years.

Several trial consignments sent to the tanners have shown that hides graded under AGMARK closely corresponded with their own assortments although they might have been called by different names. After running the Hide Grading Stations for about four to five years, it was found that the trade (tanners and shippers) was not at all interested in the grading of hides at the slaughter houses. Though it was accepted by all concerned that the flaying of hides improved to a great extent wherever grading was done, due to the small units of graded hides and their not being available in sufficiently large quantities, large buyers

were not attracted. This forced the hands of the authorities concerned to close down the hide grading stations, and by 1943 practically all the stations stopped functioning.

Tanning is a specialised industry requiring different types and qualities of raw hides for the process and economic production of various types of leather. Although some kind of sorting is constantly done by the various intermediaries between the producers and the ultimate buyers, grading is not done according to any specified or recognised grade standards. The tanners cannot, therefore, place any reliance on such sorting and there are difficulties in planning their purchases properly. This unorganised state of marketing in respect of the majority of Indian hides is almost a vicious circle responsible for jeopardising the progress of the country's tanning industry to a considerable extent.

With the progressive ban on cattle slaughter, the tanning industry has now to look to fallen hides to a greater extent than ever before. Fallen hides being definitely inferior to slaughtered hides, it would be essential to sort them out into different quality groups before they could be profitably used by various branches of the tanning industry. Besides, as stated before, unless the standard of quality of the dead hides can be raised to a considerable extent, it may be really difficult for India to produce good quality leather for finished articles of a better class. The initiative for raising the standards of these hides by the producers can be created only if there is a demand from the trade for hides of a better quality. The most effective way to accomplish this is to pay for the dead hides on a standard quality basis. The merchants in the assembling markets, however, would not think of purchasing the hides on quality basis unless they, in turn, are able to sell them on the basis of the same standards to the tanners. It is, therefore, suggested that for improving the trade and also the quality of the hides produced in the country, tanners and merchants should co-operate in evolving a simple schedule of standards for Indian hides and resolve to trade on that basis only. The Directorate of Marketing and Inspection, in consultation with the trade, has already done the spade work in framing a draft schedule for the grading of hides and it is for the trade to accept it as a basis for further discussion before finalising it on an all-India basis.

7. Transportation

A major portion of the hides produced in the country undergoes transportation in some form or the other as only a small proportion is retained for tanning at the source. Individual *chamars* in rural areas have only a piece or two for sale at a time and, therefore, hides are collected and transported only in small lots in the early stages. Besides, hides are considered 'untouchable' practically throughout the country and, as such, are not transported along with other agricultural produce. Both these factors, coupled with the perishable nature of the commodity, make collection and transportation of hides difficult and laborious.

Almost all the means of transport used for carrying other agricultural produce are employed for transporting hides. The choice depends on the distance to be travelled, the number of hides to be carried, facilities available for quick and safe despatch and the cost factor. Transport on head-loads is commonly used by producers and rural assembling agencies for carrying two or three pieces of hides over short distances, i.e., from home to the weekly *hat* or *shandy* or from the producer's holding to the assembler's godown. In markets, bundles of hides are carried by coolies on their backs from one shop to another and *vice versa*. Shoulder slings or *bahangis* are also known to be used in the States of Madras, Mysore and Madhya Pradesh. The cost of transport by these two means is estimated to be between twelve and twenty-five Paise per maund per mile.

Pack animals, camels, mules and ponies, etc., are used practically throughout the country. An average camel can carry about six maunds, a mule about four maunds and a donkey about two maunds of dry hides. On account of compactness, more of the wet-salted hides can be carried. The cost averages to about twenty-five Paise per maund per mile.

When the quantities to be transported are reasonably large, carts drawn by bullocks, buffaloes and camels are used all over the country. Hand-carts pulled by men are used only in the markets for carrying small loads of hides from one shop to another. The cost varies in different parts according to local conditions.

Motor lorries have become popular for the transport of hides between markets connected by good metalled roads.

For short distances, they are even preferred to railways on account of speed, and provision for door-to-door service. The rate, being about one to two Paise per maund per mile, compares favourably with the corresponding expenses incurred on rail transport.

For carrying hides over long distances, railways are by far the most important means of transport. A major portion of the inter-State trade is carried by this means. The freight charges fall into two categories, viz., 'class' rates and 'station to station' rates.

Hides are also transported by boats and steamers in areas where navigable rivers and canals exist. Country boats constitute the cheapest means of transport.

Producers seldom tie their hides, though for transport between markets they are invariably made into bundles. Dry hides are bundled without any wrapping but the wet ones are rolled with the hair side showing and are packed in gunny bags or mats. The weight, size and shape of the bundles vary considerably from tract to tract.

8. Storage

On account of the perishable and putrescent nature of hides, no agency in the course of their movement from the producer to the consumer ever desires to stock them for any length of time. Storage reduces their weight, deteriorates the quality and thereby diminishes their market value. In spite of all this, some storage becomes inevitable at the different stages of marketing. The period of storage differs with each agency and depends on the type of the hide, the nature and efficiency of its cure, the season, the trade demand and the tanning programme in the case of tanneries. Superior assortments, properly cleaned and cured, stand storage better than inferior goods. Dry hides keep longer than wet-salted; dry-arsenicated ones can be stored for even a year or more. On account of heat and humidity, stocks deteriorate more quickly during summer and monsoon months than during winter.

Chamars and butchers dispose of their hides almost immediately after production. In case a buyer is not readily available, rural producers may have to store a few pieces for a short time which they keep in a corner of their house or on the cross beam under the roof. In some parts they

may keep the dry hides on branches of trees near their houses.

Rural collectors and town merchants store hides from a week to a month which is generally the period during which they send their collection to the commission agents for sale. They usually have a small curing yard and store for keeping hides.

It is at the godowns of commission agents and wholesale merchants in big markets and of tanners and exporters that raw hides are kept for any appreciable length of time. Here also endeavour is always made to dispose of or use up the stock as quickly as possible. The period of storage in their case varies between a fortnight and three months and, in rare cases, may extend up to a year. The stocks carried by wholesale merchants vary considerably from time to time, depending on the position of supply and demand. They often carry stocks up to 5,000 pieces or even more. The godowns are pucca and the hides are stored after sorting on wooden planks, mats or gunnies.

Cost of storage.—The cost of storage naturally varies with the place and the type of storage. It is usually lower in the rural areas than in the urban. The rates in the latter areas may, sometimes, be twice those in the former.



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APPENDIX I

Summary of Legislation in respect of bovine slaughter in various States

Sl. No.	Name of the State	Legislation	Types of animals slaughtered of which is banned
1	2	3	4
1.	Andhra Pradesh	1. Andhra region—No legislation. 2. Telangana region—Hyderabad Slaughter of Animals Act, 1950.	Slaughter of cattle is not prohibited in Andhra region of the State. In Telangana region (including Hyderabad State) the slaughter of the following categories of cattle is prohibited : (1) Animals whether male or female which have not attained the age of 3 years. (2) Animals whether male or female which are useful for the purpose of draught or any kind of agricultural operations. (3) Animal, if male, which is useful for the purpose of breeding. (4) Animal, if female, which is useful for the purpose of giving milk or bearing offspring.
2.	Assam	The Assam Cattle Preservation Act, 1950.	Slaughter of bulls, bullocks, cows, calves, male and female buffaloes and buffalo calves prohibited except when they are over 14 years of age or when they have become permanently incapacitated for work or breeding due to age, injury, deformity or any incurable disease.
3.	Bihar	The Bihar Preservation and Improvement of Animals Act, 1955.	Slaughter of cow, calf, bull, bullock or she-buffalo is prohibited. Slaughter of the following categories of cattle is, however, allowed : (1) a bull or bullock which is over 25 years of age or which has become permanently incapable for breeding or being used as a draught animal, as the case may be ; and

APPENDIX I—contd.

1	2	3	4
4.	Gujarat	The Bombay Animal Preservation (Gujarat Extension & Amendment) Act, 1951.	<p>The slaughter of cows is entirely prohibited. Slaughter is also prohibited of the following categories of cattle :—</p> <p>(a) the animals, whether male or female, which are useful or likely to become useful for the purpose of draught or any kind of agricultural operations;</p> <p>(b) the animal, if male, which is useful or likely to become useful for the purpose of breeding ;</p> <p>(c) the animal, if female, which is useful or likely to become useful for the purpose of giving milk or bearing offspring. The above provisions do not apply to the slaughter of any animal above the age of 15 years for <i>bona fide</i> religious purposes, if such animal is not a cow.</p>
5.	Kerala	No legislation enacted	No ban on cattle slaughter.
6.	Madhya Pradesh	The Madhya Pradesh Agricultural Cattle Preservation Act, 1959.	<p>Slaughter of cows, calves of cows or calves of she-buffaloes completely banned. Slaughter of other agricultural cattle is permitted if the animal is over 15 years of age or has become permanently incapacitated for work or breeding due to injury, deformity or any incurable disease and such permanent incapacity has not been caused deliberately and if the animal is not suffering from any disease which makes its meat unwholesome for human consumption.</p>

7. Madras. . . Madras Animal Preservation Act, 1958.
8. Maharashtra. . . The Central Provinces and Berar Animal Preservation Act, 1949 (Vidarbha region only).
- Maharashtra (former Bombay area). The Bombay Animal Preservation Act, 1948.
9. Maharashtra (Maharathwada). The Hyderabad (Slaughter of Animals) Act, 1950.
- Mysore (Mysore area). The Mysore Prevention of Cow Slaughter Act, 1948.
- No bull, bullock, cow, calf, he-buffalo or she-buffalo or buffalo-calf can be slaughtered unless (1) it is over 10 years of age and is unfit for work and breeding; and (2) it has become permanently incapacitated for work or breeding due to age, injury, deformity or any incurable disease.
- The slaughter of cows is completely prohibited. Other animals (bulls, bullocks, male and female buffaloes and buffalo calves) can be slaughtered after obtaining a certificate in writing signed by the executive authority and the veterinary officer that the animal is fit for slaughter, i.e., (a) the animal is over 14 years of age and unfit for work or breeding; (b) the animal has become permanently incapacitated due to deformity or any incurable disease; and (c) the animal is suffering from any disease which makes its meat unwholesome for human consumption.
- There is no total ban on cow slaughter. However, for the slaughter of bulls, bullocks, cows, calves, male and female buffaloes and buffalo calves below the age of 15 years, permission cannot be given if:
- (a) such animal, whether male or female, is or is likely to become useful for the purpose of draught or any kind of agricultural operation;
 - (b) such animal, if male, is useful or likely to become useful for the purpose of breeding;
 - (c) such animal, if female, is useful or likely to become useful for the purpose of giving milk or bearing offspring.
- As in the Telangana area of Andhra Pradesh.
- Slaughter of cows (including bull, bullock, buffalo and calf) except of those affected with rabies is prohibited in the erstwhile Mysore State only. Rules under Section 12 not yet framed.

APPENDIX I—contd.

1	2	3	4
Former Bombay area	The Bombay Animals Preservation Act, 1948.	} Provisions of these Acts have been described above.	
Former Hyderabad area.	The Hyderabad (Slaughter of Animals) Act, 1950.		
Former Madras Area	Madras Animals Preservation Act, 1958.		
Coorg, Bellary		No regulation.	
10. Orissa . . .	The Orissa Prevention of Cow Slaughter Act, 1960.	Slaughter of cow, calf and heifer prohibited except where it is suffering from any notified contagious or infectious disease or is used for experimentation in the interest of medical or public health research. The slaughter of a bull or bullock requires a certificate from the competent authority. Such a certificate can be granted only if (a) the bull or bullock is over 14 years of age, or (b) in the case of a bull, it has become permanently unfit for the purpose of breeding and in the case of a bullock it is permanently unfit for the purposes of draught and any kind of agricultural operation.	

156

11. Punjab . . .	The Punjab Prohibition of Cow Slaughter Act, 1955.	Slaughter of other animals is not restricted.	
		Slaughter of cows (including a bull, bullock, ox, heifer or calf) is entirely prohibited, subject to the provision that killing of a cow by accident or in self-defence is not to be considered as slaughter under the Act. Slaughter is also permitted of a cow (a) whose suffering is such as to render its destruction desirable according to the certificate of the Veterinary Officer of the area or such other officer of the Animal Husbandry Department	

as may be prescribed ; or (b) which is suffering from any Contagious or infectious disease notified as such by the Government ; or (c) which is subjected to experimentation in the interest of medical and public health research by a certified medical practitioner of the Animal Husbandry Department.

Intentional killing of a bull, cow, ox or calf is entirely prohibited.

12. Rajasthan . . . The Rajasthan Preservation of Certain Animals Act, 1950.

13. Uttar Pradesh . . . The Uttar Pradesh Prevention of Cow Slaughter Act, 1955.
Slaughter of cows (including calves and heifers) except of those suffering from notifiable contagious and infectious diseases or used for experimentation for medical and public health research, totally prohibited. Bulls and bullocks over the age of 15 years or having become unfit or unserviceable for the purpose of breeding or of draught or any agricultural operation can be slaughtered after obtaining a certificate from the competent authority.

14. West Bengal . . . The West Bengal Animal Slaughter Control Act, 1950.
The slaughter of bulls, bullocks, cows, calves, male and female buffaloes, buffalo calves and castrated buffaloes is prohibited unless (a) the animal is over 14 years of age and unfit for work or breeding or (b) the animal has become permanently incapacitated from work or breeding due to age, injury, deformity or any incurable disease.

15. Jammu & Kashmir . . . The Ranbir Penal Code, 1932.
Slaughter of bovine animals (whether domesticated or wild) such as ox, bull, cow or calf (excluding a goat) is prohibited.

16. Delhi . . . Chief Commissioner's Notification No. F.2 (11/4)/51 L.S.G. dated 28th December, 1951.
No cow, calf or bullock, working he-buffalo, buffalo in milk, or pregnant buffalo shall be permitted for slaughter.

17. Himachal Pradesh . . . No legislation . . . Cattle slaughter is however prohibited by custom.

APPENDIX I—concl'd.

1	2	3	4
18.	Manipur . . .	No legislation . . .	Killing of cattle including buffaloes and cows is treated as forbidden in the Valley of Manipur under a Manipur State Darbar Resolution. It is practised by tribals in the Hills.
19.	Tripura . . .	No legislation . . .	Slaughter is prohibited.
20.	Pondicherry . . .	No legislation . . .	There is no ban on slaughter of any category of cattle.
21.	Andaman & Nicobar Islands.	No legislation . . .	Slaughter of animals is not prohibited. Slaughter is permitted only under licence. The Deputy Commissioner gives licence for such animals as are unable to do any useful work due to old age or are otherwise incapacitated due to injuries, fractures, etc.
22.	Laccadive, etc., Islands.	No legislation . . .	No prohibition on slaughter of cattle of any category or age.

APPENDIX II

Estimated annual production of hides
(Based on Livestock Census, 1961)

State	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
		Total cattle population, 1961 (thou-sands)	% of fall- en hides to total population	% of slaugh- tered hides to population	No. of fallen hides produced (thou- sands)	No. of slaugh- tered hides produced (thou- sands)	Total kips produced (thou- sands)	% to total	Total buffa- le popu- lation, 1961 (thou- sands)	% of fallen hides to total population	No. of fallen hides produced (thou- sands)	No. of slaugh- tered hides produced (thou- sands)	Total kips produced (thou- sands)	% to total	% to total	% to total	% to total
Andaman & Nicobar Islands		7	14.3	Neg.	1	1	1	Neg.	8	12.5	Neg.	1	Neg.	1	Neg.	2	Neg.
Andhra Pradesh		12,945	10.0	0.4	1,235	52	1,287	7.4	6,949	12.5	0.3	869	21	890	15.0	2,177	9.3
Assam		6,584	10.0	0.3	658	22	680	3.9	572	10.0	..	57	..	57	1.0	737	3.2
Bihar		16,104	10.0	0.3	1,610	46	1,656	9.5	3,698	14.3	0.6	528	23	551	9.3	2,207	9.5
Delhi		89	7.9	..	7	..	7	Neg.	61	8.2	39.3	5	24	29	0.5	36	0.2
Gujarat		6,553	8.3	0.8	546	54	600	3.5	2,915	8.3	0.5	243	14	257	4.3	857	3.7
Himachal Pradesh		1,213	12.5	..	152	..	152	0.9	208	12.5	..	26	..	26	0.4	178	0.8
Jammu & Kashmir		1,831	8.4	..	153	..	153	0.9	401	8.5	..	34	..	34	0.6	187	0.8
Kerala		2,753	10.0	2.2	275	60	335	1.9	485	8.2	0.6	40	3	43	0.7	578	1.6
Laccadive, etc., Islands		1	Neg.	..	Neg.	..	Neg.	Neg.	..	..	..	..	..	..	..	Neg.	Neg.
Madhya Pradesh		24,774	8.5	0.3	2,065	70	2,135	12.3	5,576	8.3	0.3	465	17	482	8.1	2,617	11.2
Madras		10,817	10.0	0.7	1,082	77	1,159	6.7	2,574	12.5	0.2	322	5	327	5.5	1,486	6.4

APPENDIX II—contd.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Maharashtra	.	15,526	8.3	0.8	1,294	127	1,421	8.2	3,134	8.3	1.1	261	93	294	5.0	1,715	7.4
Manipur	.	268	8.2	3.7	22	10	32	0.2	52	13.5	11.5	7	6	19	0.2	45	0.2
Mysore	.	9,659	10.0	0.3	966	27	993	5.7	3,022	8.3	0.2	252	5	257	4.3	1,250	5.4
Orissa	.	9,810	11.1	0.2	1,090	20	1,110	6.4	1,075	12.5	0.1	134	1	135	2.3	1,245	5.3
Pondicherry	.	80	10.0	N.A.	8	N.A.	8	Neg.	11	9.1	N.A.	1	N.A.	1	Neg.	9	Neg.
Punjab	.	6,053	12.5	..	757	..	757	4.4	4,426	12.5	..	553	..	553	9.3	1,310	5.6
Rajasthan	.	13,140	10.0	..	1,314	..	1,314	7.6	4,019	10.0	0.4	402	15	417	7.0	1,731	7.4
Tripura	.	481	10.0	..	48	..	48	0.3	43	11.6	..	5	..	5	0.1	53	0.2
Uttar Pradesh	.	26,284	8.3	..	2,190	..	2,190	12.6	10,973	8.3	4.7	914	513	1,427	24.1	3,617	15.5
West Bengal	.	11,465	10.0	1.6	1,146	180	1,326	7.6	948	12.6	1.5	119	14	133	2.3	1,459	6.3
TOTAL INDIA	.	175,837	9.5	0.4	16,519	745	17,364 (100.0)	51,150	10.2	1.4	5,238	694	5,932 (100.0)	23,296	(100.0)		

APPENDIX III

Organised tanneries in India producing finished leather (1960-61)

Name of tannery	Type of leather produced
1	2
1. M/s. British India Corporation Ltd., Cooper Allen Branch, P. B. No. 6, Kanpur.	Vegetable leather & chrome leather.
2. M/s. Cawnpore Tannery Ltd., P.B. No. 80, Kanpur	Do.
3. M/s. Dayalbagh Taj Tanneries (Private) Ltd., Dayalbagh, Agra.	Vegetable leather.
4. M/s. Grand Trunk Tanneries Co. Private Ltd., P.B. No. 215, Kanpur.	Do.
5. M/s. Hindustan Tanneries Private Ltd., Jajmow, Kanpur.	Do.
6. M/s. Indian National Tannery Private Ltd., Jajmow Road, Kanpur.	Do.
7. M/s. Lari Tannery, Jajmow Road, Kanpur	Do.
8. M/s. New India Tannery, Jajmow Road, Kanpur	Do.
9. M/s. Pioneer Tanneries and Glue Works Private Ltd., Purva Hiranman, Kanpur.	Do.
10. M/s. Shewan Tannery, Jajmow Road, Kanpur	Do.
11. M/s. Union Model Tannery, Jajmow Road, Kanpur	Do.
12. M/s. United Provinces Tannery Co. Private Ltd., Jajmow Road, Kanpur.	Vegetable leather & chrome leather.
13. M/s. Universal Tannery, Jajmow Road, Kanpur	Vegetable leather.
14. M/s. Upper India Tannery, Jajmow Road, Kanpur	Do.
15. M/s. Kapurthala Northern India Tanneries Ltd., Kapurthala.	Do.
16. M/s. Bata Shoe Co. Private Ltd., Batanagar, 24-Parganas.	Vegetable leather & chrome leather.
17. M/s. Bata Shoe Co. Private Ltd., Mokamehghat	Vegetable leather.
18. M/s. National Tannery Co. Ltd., Mercantile Building, Lall Bazar Street, Calcutta.	Vegetable leather & chrome leather.

APPENDIX III—*contd.*

1	2
19. M/s. Beltex Private Ltd., Ellis Bridge, Ahmedabad .	Vegetable leather.
20. M/s. Gold Filled Leather Works, P.B. No. 2181, Bombay.	Do.
21. M/s. Kathiawar Industries, P.O. Sherbaug . . .	Do.
22. M/s. Western India Tanneries Ltd., Dharavi, Bombay-17.	Vegetable leather & chrome leather.
23. M/s. Chrome Leather Co. (Private) Ltd., Chromepet, P.O., Madras.	Do.
24. M/s. Gordon, Woodroffe Leather Mfg. Co. Private Ltd., Pallavaram P.O., Madras.	Do.
25. M/s. M. Hajee Mohd. Ismail Sahib & Co., Pernambut, N.A. Distt.	Vegetable leather.
26. M/s. M. Nazir Hussain & Co., 11, Perambur High Road, Madras-12.	Do.
27. M/s. N. Mohamed Mian Rawther & Co. (P) Ltd., Palakarai, Tiruchirappalli.	Vegetable leather & chrome leather.
28. M/s. Mysore Chrome Tanning Co. Ltd., Mysore Road, Bangalore-12.	Do.
29. M/s. P. E. Boyce and Sons, Belgaum . . .	Vegetable leather.
30. M/s. Bhopal Glues & Chemicals Private Ltd., Jhangirabad, Bhopal.	Do.
31. M/s. Government Tannery, P.O. Bandhraj, Distt. Phulbani.	Vegetable leather & chrome leather.
32. M/s. V. M. Syed Mohd. & Co., P. B. No. 24, Eluru	Vegetable leather.
33. M/s. C.H.C. Tannery, P.B. No. 117, Kanpur . . .	Vegetable leather & chrome leather.

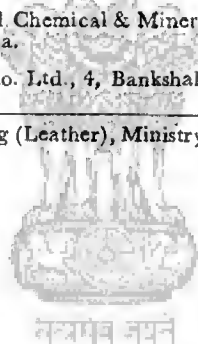
Source : Development Wing (Leather), Ministry of Commerce & Industry.

APPENDIX IV

Names and addresses of important glue manufacturers in India (1960-61)

Sl. No.	Name and address of the party or firm
1.	M/s. Bhor Industries, Bhor, via Poona.
2.	M/s. Dharamsi Morarji Chemical Co. Ltd., Prospect Chamber, 317-21, Hornby Road, Fort, Bombay.
3.	M/s. Glue Products (P) Ltd., Cambay.
4.	M/s. Western India Match Co. Ltd., P.O. Box 254, Bombay.
5.	M/s. Bhopal Glues & Chemicals (P) Ltd., Jhangirabad, Bhopal.
6.	M/s. Shaw Wallace & Co. Ltd., P.B. No. 14, Madras.
7.	M/s. Knit Bone & Glue Works, Rajpura (Punjab).
8.	M/s. Calcutta Industrial Chemical & Mineral Co.(P) Ltd., 43, Dharamtalla Street, Calcutta.
9.	M/s. Shaw Wallace & Co. Ltd., 4, Bankshall Street, Calcutta.

Source : Development Wing (Leather), Ministry of Commerce & Industry.



APPENDIX V

Monthly variation in prices of raw hides, 1962-63

(In rupees per quintal)

Month	Calcutta (Raw hide)		Bombay (Raw salted hide)		Buff hide mardari
	Cow hide wet-salted	Buff hide wet-salted	Cow hide halali	Buff hide halali	
April	259.44	135.00	122.00	122.00	104.00
May	259.44	135.00	124.00	123.00	105.00
June	254.22	129.33	113.00	123.00	114.00
July	252.78	114.44	115.00	115.00	105.00
August	248.89	115.56	115.00	115.00	105.00
September	255.56	127.78	109.00	109.00	96.00
October	258.33	134.44	120.00	120.00	104.00
November	280.00	131.67	115.00	115.00	101.00
December	275.56	122.22	105.00	105.00	95.00
January	300.00	122.22	105.00	105.00	95.00
February	333.33	122.22	105.00	105.00	95.00
March	333.33	122.22	105.00	105.00	96.00
Average	275.91	126.01	112.75	113.50	101.25

APPENDIX V—contd.

Monthly variation in prices of raw hides, 1963-64

(In rupees per quintal)

Month	Calcutta (Raw hide)			Bombay (Raw hide)		
	Cow hide wet-salted	Buff hide wet-salted	Cow hide halali	Cow hide murdari	Buff hide halali	Buff hide murdari
April	333.33	122.22	105.00	95.00	105.00	95.00
May	333.33	122.22	108.00	102.00	107.00	85.00
June	333.33	127.78	111.00	105.00	113.00	100.00
July	333.33	144.44	113.00	103.00	113.00	105.00
August	392.22	177.11	110.00	105.00	110.00	105.00
September	244.44	150.00	105.00	95.00	105.00	95.00
October	227.78	133.33	105.00	95.00	105.00	95.00
November	227.78	133.33	126.00	108.00	124.00	107.00
December	194.44	136.11	132.00	111.00	132.00	110.00
January	293.33	144.44	126.00	114.00	125.00	111.00
February	258.33	144.44	135.00	125.00	135.00	125.00
March	244.44	144.44	135.00	125.00	135.00	125.00
Average	277.18	139.99	117.58	107.08	117.42	104.83

APPENDIX V—concl'd.

Monthly variation in prices of raw hides, 1964-65

(In rupees per quintal)

Month	Calcutta (Raw hide)			Bombay (Raw hide)		
	Cow hide wet-salted	Buff hide wet-salted	Cow hide halali	Cow hide mundari	Buff hide halali	Buff hide mundari
April	233.33	144.44	132.00	119.00	130.00	117.00
May	231.48	143.30	135.00	125.00	137.00	125.00
June	225.98	143.30	133.00	116.00	132.00	115.00
July	220.46	143.30	134.00	124.00	131.00	118.00
August	220.46	143.30	145.00	135.00	145.00	135.00
September	220.46	143.30	135.00	130.00	135.00	127.00
October	220.46	143.30	110.00	103.00	124.00	118.00
November	222.22	127.78	110.00	105.00	123.00	115.00
December	222.22	131.11	123.00	110.00	121.00	109.00
January	286.87	144.44	110.00	100.00	115.00	105.00
February	302.78	144.44	110.00	100.00	115.00	100.00
March	277.78	144.44	115.00	100.00	115.00	100.00
Average	240.38	129.43	124.33	113.92	126.92	115.33

APPENDIX VI

Certain hide assembling markets in India

Markets	No. of hides assembled daily*	(1)	(2)
		<i>Gujarat :</i>	
		Rajkot . . .	200
		<i>Kerala :</i>	
<i>Andhra Pradesh :</i>		Quilon . . .	500
Vijayawada . . .	90,000 (a)	Changanacherry .	330
Eluru . . .	160,000 (a)	Alwaye . . .	480
Vizianagaram . .	250,000 (a)	Trichur . . .	120
Manapuram . . .	125,600 (a)	Kasargode . . .	100
Rajahmundry . .	140,000 (a)	Trivandrum . . .	275
Bakaram . . .	90,000 (a)	Calicut . . .	125
Guntur . . .	108,000 (a)		
		<i>Maharashtra :</i>	
<i>Bihar :</i>		Dharavi (Bombay) .	500 to 700
Darbhanga . . .	300		
Muzaffarpur . . .	200	<i>Madhya Pradesh :</i>	
Kishanganj . . .	150	Rewa . . .	30 to 50
Bhagalpur . . .	125	Nagod . . .	30 to 50
Patna . . .	80	Nowgong . . .	30 to 50
Ranchi . . .	200	Schol . . .	30 to 50
Madhubani . . .	125	Jagdalpur . . .	30
Sitamarhi . . .	100	Bhatapara . . .	10 to 15
		Bisrampur . . .	10 to 15
<i>Delhi :</i>		Dhamtari . . .	10 to 15
Delhi . . .	65,000 (a)		

*Relates to 1958-59.

(a) Annual.

APPENDIX VI—*contd.*

(1)	(2)	(1)	(2)
<i>Madras :</i>		<i>West Bengal :</i>	
Trichy . . .	615	Calcutta . . .	22,000
Ranipet . . .	270	Burdwan . . .	100
Katpadi . . .	60	Asansol . . .	100
Dindigul . . .	55	Ichchapur . . .	100
Coimbatore . . .	60	Sitarampur . . .	100
		Gushkora . . .	100
		Sainthia . . .	100
		Bankura . . .	100
		Vishnupur . . .	100
		Purulia . . .	100
<i>Punjab :</i>		Darjeeling . . .	100
Jullundur . . .	100	Kalimpong . . .	100
Amritsar . . .	60	Mal . . .	100
Katkapura . . .	40 to 50	Alipurduar . . .	100
Faridkot . . .	40 to 50	Gayerkata . . .	100
Jaitu . . .	40 to 50	Pundibari . . .	100
		Arambag . . .	100
		Beldanga . . .	100

APPENDIX VII

Hides Grading and Marking Rules

1. *Short title and application.*—(1) These Rules may be called the Hides Grading and Marking (Amendment) Rules, 1962.

(2) They shall apply to hides produced in India.

2. *Grade designations.*—Grade designations to indicate the quality of hides (kips, buffaloes and calves) are set out in column 1 of Schedule I.

3. *Definition of quality.*—The quality indicated by such grade designations is set out against such designations, in columns 2 to 11 of Schedule I.

4. *Grade designation marks.*—The grade designation mark shall be indicated by 2, 3 or 4 holes of 6 mm. diameter, representing A, B or C grades respectively.

5. *Method of marking.*—The holes shall be punched on each hide at the root of the tail at a distance of 6 mm. from each other and shall be arranged as shown in Schedule II. A lead seal bearing the word AGMARK on one side and a letter representing one of the weight groups, namely, H, M, L or O, as the case may be, on the other, shall be secured to each hide by a piece of twine tag which should be passed through all the holes. The place of packing shall also be indicated on the lead seal in code letters.



APPENDIX VII—contd.

SCHEDULE I

Grade designations and definition of quality for hides (kips, buffaloes and calves) produced in India
(See Rules 2 and 3)

Definition of quality											
Special characteristics respecting state or condition											
General characteristics											
Hair side					Flesh side		State of condition	Trimmed to	weight prior to curing	Limits of weight	
Constitutional	Branding iron marks	Pox, scab, sores and skin disease marks	Marks due to external injuries	Scratches	Flayer's marks and cuts	Warbles and warble holes*					Weight groups	Buffalo hides	Kips
1	2	3	4	5	6	7	8	9	10	11	12
A	Hides from young or middle aged animal with no rib marks or signs of emaciation.	Not allowed.	No pox, sore or marks of skin diseases allowed, but one small scab and a small sore may be allowed if not on the butt.	Not allowed.	One small superficial scratch not affecting the grain allowed if within 102 mm. of the outer edge of the neck or belly portion only.	No deep cuts allowed. Not more than 4 shallow cuts; other cuts on the butt permitted.	One and more than 3 warbles allowed.				
B	Slight rib marks allowed.	Not more than one brand mark allowed which may only be on the belly, neck, or cheek.	No pox or skin disease marks allowed. Two small scars allowed if not on the butt, the case of kips and buffalo hides these may be on the butt provided they are	Permitted on belly.	Superficial scratches not affecting the grain allowed.	Shallow cuts allowed and one deep cut allowed if not on the butt.	Not more than 5 open and 8 blind warbles allowed.	The hides shall be reasonably clean and free from flesh, fat and extraneous matter. Horns, ears, feet (from above the flock) and tail (beyond 102 mm.) shall be removed.	Heavy (H) Medium (M) Light (L) Calf (C)	27 kg. and over. 18 to 27 kg. 11 to 18 kg. Under 11 kg.	13 kg. and over. 8 to 13 kg. 4 to 8 kg. Under 4 kg.

C ¹ Rib marks freely allowed.	At least one half of the hide shall be free from brand marks.	within 51 mm. of the line of the spine.	At least half the hide shall be unaffected.	Allowed if on neck, belly, or below hip joint. §	Reasonably free from deep scra- tches.	Shallow cuts allowed. A reasonable number of deep cuts or holes per- mitted if not on the butt. §	Not more than 10 open and a reasonable number of blind warbles allowed.		
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*Warble holes are holes or spots which can be opened with a blunt skewer.

†Shallow cuts are cuts not exceeding one-fourth of the thickness of the hide.

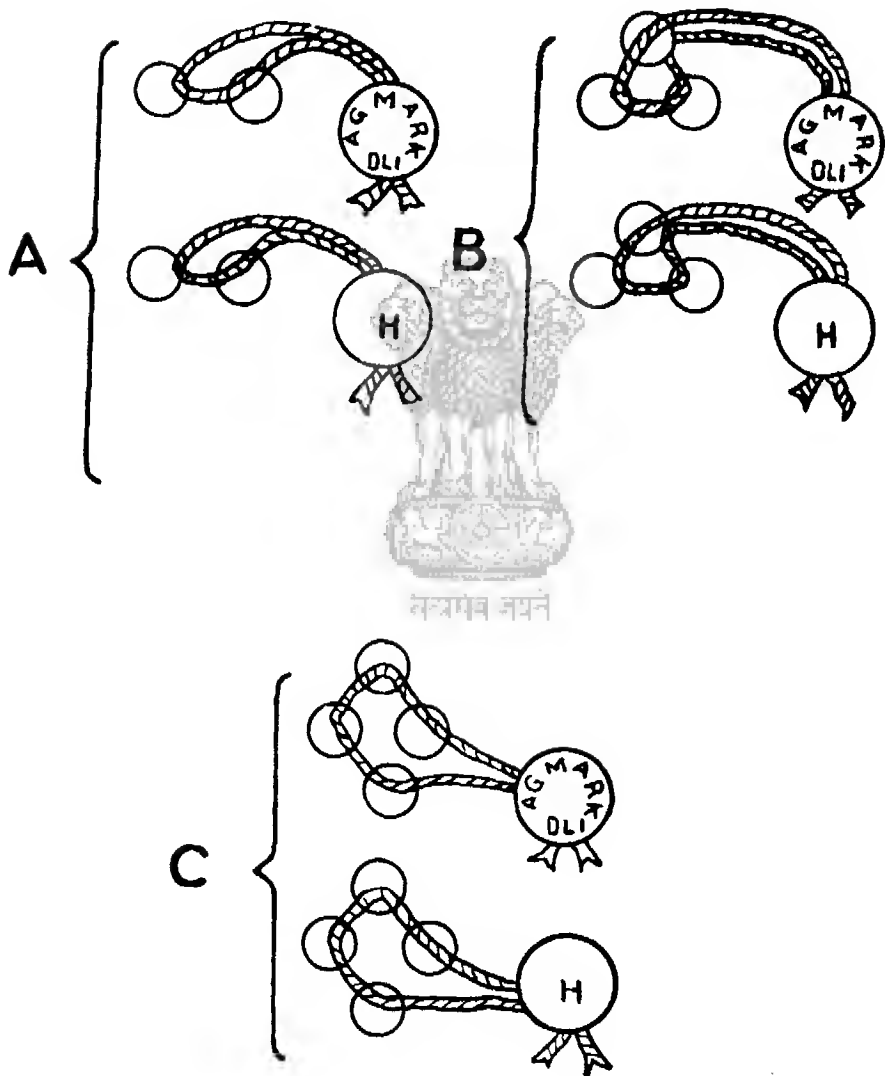
§In the case of heavy and medium weight buffaloes only. *One sore or cut mark on the hair or flesh side within 51 mm. of the spine* may be permitted.

‡Buff hides weighing over 5 kg. shall not be graded higher than C. Young bull hides up to 5 kg. may be placed in B grade but not in A.

APPENDIX VII—concl'd.

SCHEDULE II

Grade designation marks for hides and the method of marking
(See Rule 5)



GLOSSARY OF INDIAN TERMS

A

ARATDAR . . . A commission agent.

B

BAHANGI . . . A pole, the ends of which are connected by rope to a flat contrivance for carrying load, the pole being balanced on the shoulder.

BARA . . . An enclosure or compound.

BEOPARI . . . An itinerant trader.

C

CHAMAR . . . The name of one of the Hindu sub-castes. Their principal occupation is to recover hides from dead animals, occasionally tan them and prepare cheap and crude leather goods.

CHARASA . . . A large bucket made from partially tanned hides used for drawing water from wells for irrigation purposes. Bullocks are used for pulling the *charasa*.

CHHOOT . . . An allowance in weight credited to buyers to cover dirt and other extraneous matter which might be adhering to the hides.

D

DHARAMSHALA . . . A building used for accommodating, generally free of any charge, pilgrims and travellers for short periods.

DHED, DHEDH . . . An alternative name for *chamar* in certain parts of India.

DHORE . . . An alternative name for *chamar* in Madhya Pradesh.

DOLE . . . A small bucket, made of partially tanned hides, used for drawing water from wells.

H

HAT . . . A periodical market.

HISABANA . . . A market charge levied for the services of the accountant.

HUNDI . . . A bill of exchange or draft.

K

KAMIN . . . One belonging to the menial class.

KATARA . . .	A buffalo calf.
KATTOTI . . .	Same as <i>chhoot</i> .
KHALPA . . .	A <i>chamar</i> is known by this name in Gujarat State.
KHARI (SALT) . . .	Used in the Report to describe a particular type of earthy deposit rich in sodium and magnesium sulphates used for curing hides in certain parts of the country.
KOSE	Same as <i>charasa</i> .
KUPPA	A container made out of raw hides used for storage or transport of oil, etc.
KURBANI	Slaughtering of animals on the occasion of 'Id-ul-Zuha', a Muslim festival.

M

MADIGA	Alternative name for <i>chamar</i> generally used in the South.
MAHAR	A <i>chamar</i> is known by this name also in Gujarat State.
MAUND	37.3242 kg.
MOTE, MOTH	Same as <i>charasa</i> , <i>kose</i> .
MUSHAK	A leather bag used by the water carrier for taking water from place to place.
MUNSHIBANA	A market charge levied for the service of a <i>Munshi</i> (clerk.)

P

PAKHAL	A large leather bag hung on the sides of a bullock for carrying water from place to place.
PUGCA	Final, mature; <i>pucca</i> road means metalled road.

Q

QASSAI	A term used for a butcher in Northern India.
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R

RAIGHER	An alternative name for <i>chamar</i> .
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S

SAHUKAR	A money-lender.
SARAI	An inn.
SHANDIES	Same as <i>hats</i> .
SUKTI	Trade name for hides cured by drying them in the sun.

T

THELA	A long cart drawn by bullocks, etc.
TONGA	A two-wheeled carriage drawn by a pony.

**List of publications issued by the Agricultural Marketing Adviser
to the Government of India**

Market- ing Se- ries No.	Symbol No.	Name of Publication	Year of of Pub- lication	Price
1	2	3	4	5
				Rs. P.
*1	AMA. 1	Report on the Marketing of Wheat in India.	1937	1·25
*2	AMA. 2	Report on the Cold Storage and Transport of Perishable Produce in Delhi.	1937	0·75
*3	AMA. 3	Agricultural Produce (Grading & Marking) Act, 1937, with rules made prior to 1st April, 1947, (Out of print, See AMA. 17, below).		
*4	AMA. 4	Abridged edition of the Report on the Marketing of Wheat in India (in English).	1938	0·50
*5	AMA. 5	Abridged edition of the Report on the Marketing of Wheat in India (in Hindi).	1938	0·50
*6	AMA. 6	Abridged edition of the Report on the Marketing of Wheat in India (in Urdu).	1938	0·50
*7	AMA. 7·37	Annual Report of the Agricultural Marketing Adviser and Summarised Reports of Senior Marketing Officers in Provinces and Certain States for the year ending 31st December, 1937.	1938	0·37
*8	AMA. 8	Report on the Marketing of Linseed in India.	1938	1·25
*9	AMA. 9	Report on the Marketing of Eggs in India and Burma.	1938	1·25
*10	AMA. 10	Report on the Marketing of Tobacco in India and Burma.	1939	1·25

1	2	3	4	5
*11	AMA. 12	Abridged edition of the Report on the Marketing of Linseed in India (in English).	1939	0.75
*12	AMA. 17	Agricultural Produce (Grading & Marking) Act, 1937, with rules made prior to 31st August, 1940.	1940	0.75
*13	AMA. 13	Abridged edition of the Report on the Marketing of Linseed in India (in Bengali).	1939	0.75
*14	AMA. 14	Abridged edition of the Report on the Marketing of Linseed in India (in Hindi).	1939	0.50
*15	AMA. 15	Abridged edition of the Report on the Marketing of Linseed in India (in Marathi).	1940	0.50
*16	AMA. 16	Abridged edition of the Report on the Marketing of Linseed in India (in Urdu).	1939	0.50
*17	AMA. 7.38	Annual Report of the Agricultural Marketing Adviser and Summarised Reports of Senior Marketing Officers in Provinces and Certain States for the year ending 31st December, 1938.	1939	0.75
*18	AMA. 19	Abridged edition of the Report on the Marketing of Eggs in India and Burma (in English).	1940	0.50
*19	AMA. 7.39	Annual Report of the Agricultural Marketing Adviser and Summarised Reports of Senior Marketing Officers in Provinces and Certain States for the year ending 31st December, 1939.	1940	1.62
*20	AMA. 11	Report on the Marketing of Grapes in India and Burma.	1940	1.25
*21	AMA. 18	Report on the Marketing of Coffee in India and Burma.	1940	1.25
*22	AMA. 21	Report on the Marketing of Potatoes in India and Burma.	1941	1.25

1	2	3	4	5
*23	AMA. 22	Report on the Marketing of Milk in India and Burma.	1941	1.25
*24	AMA. 25	Preliminary Guide to Indian Fish, Fisheries, Methods of Fishing and Curing.	1941	1.00
*25	AMA. 27	Abridged edition of the Report on the Marketing of Eggs in India and Burma (in Urdu).	1941	1.00
*26	AMA. 26	Abridged edition of the Report on the Marketing of Eggs in India and Burma (in Hindi).	1941	1.00
*27	AMA. 20	Report on the Marketing of Rice in India and Burma.	1941	1.25
*28	AMA. 24	Report on the Marketing of Groundnuts in India and Burma.	1941	1.25
*29	AMA. 7-40	Annual Report of the Agricultural Marketing Adviser and Summarised Reports of Senior Marketing Officers in Provinces and Certain States for the year ending 31st December, 1940.	1941	1.25
*30	AMA. 28	Abridged edition of the Report on the Marketing of Potatoes in India and Burma (in English).	1941	1.25
*31	AMA. 29	Abridged edition of the Report on the Marketing of Grapes in India and Burma (in English).	1941	0.50
*32	AMA. 30	Abridged edition of the Report on the Marketing of Milk in India and Burma (in English).	1941	0.50
*33	AMA. 39	Handbook on the Quality of Indian Wool.	1942	1.25
*34	AMA. 38	Abridged edition of the Report on the Marketing of Tobacco in India and Burma (in English).	1942	1.25
*35	AMA. 31	Abridged edition of the Report on the Marketing of Groundnuts in India and Burma (in English).	1942	0.50
*36	AMA. 41	Report on the Marketing of Hides in India and Burma.	1943	1.25

1	2	3	4	5
*37	AMA. 35	Abridged edition of the Report on the Marketing of Rice in India and Burma (in English).	1942	0.50
*38	AMA. 34	Instructions regarding the Grading & Marking of Ghee in connection with Agricultural Produce Grading & Marking (Ghee) Rules, 1938.	1943	0.25
*39	AMA. 23	Report on the Marketing of Sugar in India and Burma.	1943	1.25
*40	AMA. 37	Report on the Marketing of Skins in India and Burma.	1943	1.25
*41	AMA. 22.2	Second edition of the Report on the Marketing of Milk in India and Burma.	1943	1.25
*42	AMA. 36	Report on the Co-operative Marketing of Agricultural Produce in India.	1943	1.25
*43	AMA. 42	Report on the Marketing of Citrus Fruits in India.	1942	1.25
*44	AMA. 33	Report on the Marketing of Lac in India.	1943	1.25
*45	AMA. 40	Report on Fairs, Markets and Produce Exchanges in India.	1943	1.25
46	AMA. 32	Report on the Marketing of Coconut and Coconut Products in India.	1944	1.25
*47	AMA. 45	Report on the Marketing of Cashewnuts in India.	1944	1.25
*48	AMA. 43	Report on the Marketing of Gram in India.	1945	1.25
*49	AMA. 47	Report on the Marketing of Bananas in India.	1945	1.25
*50	AMA. 48	Report on the Marketing of Sheep and Goats in India.	1944	1.25
*51	AMA. 44	Report on the Marketing of Barley in India.	1945	1.25

1	2	3	4	5
*52	AMA. 46	Report on the Marketing of Fish in India.	1946	1.25
*53	AMA. 51	Report on the Marketing of Cattle in India.	1946	1.25
*54	AMA. 52	Report on the Marketing of Wool and Hair in India.	1946	1.25
*55	AMA. 53	Report on the Marketing of Castor-seed in India.	1950	1.25
*56	AMA. 57	Agricultural Produce (Grading & Marking) Act, 1937, with Rules made prior to 31st December, 1946.	1947	1.25
*57	AMA. 50	Report on the Marketing of Ghee and other Milk Products in India.	1947	3.00
*58	AMA. 55	Supplement to the Report on the Marketing of Wheat in India.	1946	1.25
*59	AMA. 56	Report on the Marketing of Cardamom in India.	1947	1.12
*60	AMA. 49	Report on the Marketing of Rapeseed and Mustard in India.	1950	2.00
*61	AMA. 59	Bulletin on the Marketing of Sann Hemp in India.	1948	1.50
62	AMA. 54	Bulletin on the Marketing of some Important Stone, Pome and Small Fruits and Pineapples in India.	1950	1.25
63	AMA. 58	Report on the Marketing of Areca-nuts in India.	1949	1.25
64	AMA. 60	Report on the Marketing of Milk in the Indian Union.	1950	3.50
65	AMA. 46. II	Report on the Marketing of Fish in the Indian Union.	1951	5.62
66	AMA. 25. II	Preliminary Guide to Indian Fish, Fisheries, Methods of Fishing and Curing.	1951	4.25

1	2	3	4	5
67	AMA. 62	Abridged edition of the Report on the Marketing of Milk in the Indian Union (in Hindi).	1951	1.12
68	AMA. 61-48	Annual Report of the Directorate of Marketing and Inspection for the year ending 31st December 1948.	1950	1.25
69	AMA. 64	Atlas on Livestock and Livestock Products. (Out of st.)		
70	AMA. 66	Instructions for Grading Tobacco	1951	1.12
71	AMA. 69	Report on the Marketing of Hides in India.	1952	4.50
72	AMA. 68	Report on the Marketing of Sesamum and Nigerseed in India.	1952	3.50
73	AMA. 73	Report on the Marketing of Groundnuts in India.	1953	7.50
74	AMA. 70	Report on the Marketing of Maize and Millets in India.	1954	5.50
75	AMA. 74	Report on the Marketing of Rice in India.	1955	8.00
76	AMA. 75	Report on the Marketing of Tobacco in India.	1954	7.50
77	AMA. 78	Report on the Marketing of Mangoes in India.	1958	10.00
78	AMA. 77	Methods of Sampling & Testing Vegetable Oils and Fats under Agmark.	1954	2.25
79	AMA. 79	Report on the Marketing of Meat in India.	1955	5.75
	AMA. 81	Report on the Marketing of Skins in India.	1955	5.50
	AMA. 85	Quality of Ghee sold loose in Urban Markets in India. Ghee Series I (in English).	1955	0.25
	AMA. 88	Studies in Ghee Series II (in English).	1955	0.19

1	2	3	4	5
81	AMA. 80	Methods of Sampling and Testing Butter Fat (Ghee) and Butter under Agmark.	1954	2.37
82	AMA. 82	Bulletin on the Marketing of Palmyra Fibres in India.	1955	1.62
83	AMA. 83	Report on the Marketing of Chillies in India.	1957	7.75
84	AMA. 86	Report on the Marketing of Poultry in India.	1955	3.50
85	AMA. 87	Report on the Marketing of potatoes in India.	1956	3.00
86	AMA. 89	Brochure on the Marketing of Hennain India (in English).	1955	0.88
87	AMA.90.54	Report on the Analysis of Fruit and Vegetable Products in India.	1956	2.37
88	AMA. 90	Report on the Marketing of Tapioca in India.	1956	1.62
89	AMA. 91	Report on the Marketing of Linseed in India.	1956	10.50
90		Fruit Grading Instructions	..	..
91	AMA. 94.1	Report on the Regulated Markets in India, Vol. I—Legislation.	1956	2.25
92	AMA. 84	Report on the Marketing of Cattle in India.	1956	3.37
93	AMA. 97	Report of an <i>Adhoc</i> Survey of Cold Storages for Fruits and Vegetables in Consuming Centres in India. (1955).	1956	0.88
94	AMA. 94	Administration Report of the Directorate of Marketing and Inspection for the period 1949 to 1954.	1956	2.00
95	AMA. 95	Ghee Series I (in Hindi) . .	1956	0.31
96	AMA. 96	Ghee Series II (in Hindi) . .	1956	0.25

1	2	3	4	5
97	AMA. 100	Report on the Fruit and Vegetable Murabba Industry in India, 1956.	1957	1.50
98	AMA. 95.55	Annual Administration Report of the Directorate of Marketing and Inspection for the Year 1955.	1957	1.75
99	AMA. 103	Brochure on the Marketing of Henna in India (in Hindi).	1957	0.56
100	AMA. 104	Report on the Marketing of Ghee and Other Milk Products in India.	1957	2.25
101	AMA. 33-II	Report on the Marketing of Lac in India.	1961	15.00
102	AMA. 101	Report on the Marketing of Pulses in India.	1959	6.50
103	AMA. 105	Ata Grading Instructions	1957	0.75
104	AMA. 106	Instructions for Grading and Marking Sugarcane Gur (Jaggery) under the Agricultural Produce (Grading & Marking) Act, 1937, and the Sugarcane Gur (Jaggery) (Grading and Marking) Rules, 1943.	1958	2.37
105	AMA. 107	Instructions on Grading and Marking of Creamery Butter.	1958	2.50
106	AMA. 112	Handbook on Grading of Sann Hemp in India.	1958	2.00
107	AMA. 108	Handbook on Grading of Bristles in India.	1958	2.00
108	AMA. 109	Brochure on the Marketing of Lemongrass Oil in India.	1958	3.50
109	AMA. 102	Agricultural Produce Grading and Marking Act, 1937.	1961	(For official use only)
110	AMA. 93	Atlas on the Marketing Aspects of Food Crops.	1959	10.00
111	AMA. 110	Report on the Chutney Industry in India, 1957.	1958	3.87
112	AMA. 98	Atlas on the Marketing Aspects of Commercial Crops.	1959	10.00

1	2	3	4	5
113		A Note for the Guidance of Parties wishing to Grade Ghee under Agmark (in Hindi).	1958 (Unpriced)	
114	AMA.95-56	Administration Report of the Directorate of Marketing and Inspection for the year 1956.	1959	4-40
115	AMA. 113	Report on the Marketing of Bones and Bonemeals in India.	1958	4-50
116	AMA. 114	The Fruit Products Order, 1955	1958	1-44
117	AMA. 111	Brochure on the Standard Methods of Wool Analysis.	1958	1-12
118	AMA. 115	Instructions for Grading Lemon-grass and Sandalwood Oils.	1959	2-87
119	AMA. 117	Brochure on the Marketing of Myrobalansa in India.	1960	2-85
120	AMA.1-20	Monograph on Types and Grades of Unmanufactured Tobacco exported from India in 1957.	1960	3-05
121		Information Sheet No. 1	1960 (Unpriced)	
122	AMA. 118	Standard Methods of Wool Analysis (in Hindi).	1962	2-80
123	AMA. 121	Report on the Marketing of Tobacco in India.	1960	11-00
124	AMA. 122	Report on the Marketing of Animal Fats and Certain Important By-products in India.	1961	7-75
125	AMA. 125	Report on the Marketing of Arecanuts (Tamul) and Betelnuts (Supari) in India.	1962	9-50
126	AMA. 123	Report on the Marketing of Fish in the Indian Union.	1961	7-00
127	AMA. 126	Brochure on the Marketing of Green Peas in India.	1961	3-70
128	AMA. 127	Brochure on the Marketing of Sandalwood and its Oils.	1961	4-40
129	AMA. 124	Brochure on the Marketing of Goat Hair in India.	1961	1-20

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130	AMA.95-60	Administration Report of the Directorate of Marketing and Inspection for the three years ending 1959-60.	1962	5-00
131		Directory of Cold Storages in India	1961	1-95
132		Wool Grading Instructions	1962	(Unpriced)
133	AMA. 129	Bulletin on the Marketing of Aloe and Sisal Fibres in India.	1962	2-95
134	AMA. 95-62	Administration Report of the Directorate of Marketing and Inspection for the year 1960-61.	1962	(Unpriced)
135	AMA. 131	Bulletin on the Marketing of Sann Hemp in India.	1962	7-75
135-B	AMA. 134	Report on Containers used for Fruits and Vegetables in India.	1963	6-75
136	AMA. 115	Grading Instructions on Lemon-grass and Sandalwood Oils (in Hindi).	1962	4-15
137	AMA. 130	Brochure on the Marketing of Bristles in India.	1962	3-65
138		Instructions for Grading and Marking of Sann Hemp under Agmark.	1963	
139		Grading of Sann Hemp in India (in Hindi).	1963	
		Instructions for the Grading of Honey under Agmark.	1961	
140		Instructions for the Grading of Vegetable Oils under Agmark.	1963	
143	AMA. 132	Report on the Marketing of Wheat in India.	1965	15-50
143-A	AMA. 139	Co-operative Marketing of Cotton (A few case studies).	1965	5-25
145		Instructions for the Grading and Marking of Vegetable Oils under Agmark for Export.	1964	

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145	Price Spread of Rice Studies in Costs and Margins, 1959-60.	1961	(For official use only)	
AMA. 119	Handbook on Grading of Bristles in India (in Hindi).	1960	4.00	
	A Note for the Guidance of Parties wishing to Grade Ghee under Agmark.	1961	(Unpriced)	
	A Note for the Guidance of Parties wishing to Grade Creamery Butter under Agmark.	1961	(Unpriced)	
	A Note for the Guidance of Parties wishing to Grade Vegetable Oils under Agmark.	1963	(Unpriced)	
AMA. 137	Directory of Wholesale Agricultural Produce Assembling Markets in India.	1965	12.50	
146	AMA. 136 The Fruit Products Order, 1955 (as amended upto 19-1-1963).	1965	1.20	
147	Administration Report of the Directorate of Marketing and Inspection for the two years ending 1962-63.	1965	(Unpriced)	
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